

ANNOTATED CHECKLIST OF MARINE SPONGES OF THE INDIAN REGION

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An annotated checklist of marine sponges from the Indian region was compiled primarily from: identified sponges in the holdings of Zoological Survey of India; published descriptions of species from this region; and personal correspondence with experts in the field both from European and Oriental regions. 451 species are recorded from the 3 classes, 17 orders, 64 families and 168 genera. Few taxonomic studies on sponges have been undertaken in the Indian region over the past two decades, but there is a large early literature commencing in 1873. Consequently most of the literature and species descriptions are relatively old, sometimes too brief, and sometimes entirely inadequate to differentiate between related species. It is also well known that sponges are notoriously difficult to identify and misidentifications are common. Unfortunately re-examination of many type or voucher specimens was not possible given that they are scattered throughout many different museums and institutions. The preparation of this checklist therefore relies heavily on the published literature, with only relatively few species yet checked from original material. □ *Porifera, taxonomic checklist, Indian sponges, sponge identification.*

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Published literature on the Indian region sponge fauna has a rich and productive history, commencing with the work of Bowerbank (1873), Carter (1880-1887), Dendy (1887-1916) and Schulze (1894-1904) followed by the present century workers Annandale (1911-1915), Kumar (1924-1925), Dendy & Burton (1926), Burton (1928-1937), Burton & Rao (1932), Rao (1941), Ali (1956), Thomas (1968-1993) and Pattanayak (1995-1998), with some revisions of this fauna also made by Hooper (1996). With the exception of several papers by Thomas few taxonomic studies have been undertaken in the Indian region over the past two decades. Consequently most of the literature and species descriptions are relatively old, sometimes too brief, and sometimes entirely inadequate to differentiate between related species. It is also well known that sponges are notoriously difficult to identify and misidentifications are common. Unfortunately re-examination of many type or voucher specimens was not possible given that they are scattered throughout many museums and institutions.

Consequently, this annotated checklist of marine sponges from the Indian region is based primarily on: a) identification of sponges in the holdings of Zoological Survey of India by several workers, including the author; b) cross-referencing of all available literature pertaining to this region; and c) personal correspondence with experts in the field both from European and Oriental

regions. This heavy reliance on the published literature is presently unavoidable, with only relatively few species yet checked from original material, although it is anticipated that this checklist will be both expanded (with current work being undertaken by the Zoological Survey of India) and revised (as type material becomes available to check species' identities, and as contemporary authors increase their published revisions).

For convenience the Indian region is divided into 9 zones (see Fig. 1). In the species checklist each published record is accompanied by one or more literature citation, the locality and region of collection, as defined above in brackets following the citation. For brevity, only the Indian literature is cited in this paper. Literature pertaining to the higher taxa can be found in Hooper & Wiedenmayer (1994).

SYSTEMATIC CHECKLIST OF SPONGES

Phylum Porifera

Class Demospongiae

Subclass Homoscleromorpha

Order Homosclerophorida

Family Plakinidae Schulze

Genus *Corticium* Schmidt. *C. acanthastrum* Thomas, 1968e: 260, fig. 1a-b; Thomas, 1985: 353, pl. VIII, fig. 21 (Palk Bay) (5). *C. candelastrum* Schmidt; Thomas, 1968e: 261, fig. 2a-b;

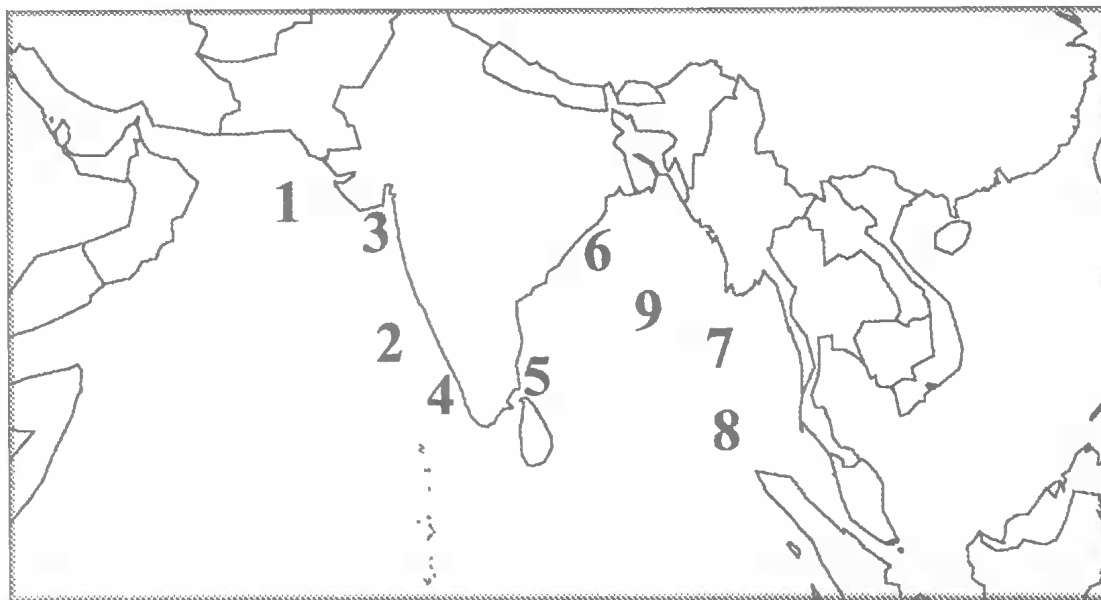


FIG. 1. Study zones of the Indian region. 1, Arabian sea - off-shore waters; 2, Laccadive Islands; 3, northern W coast - Gujarat and Maharashtra; 4, southern W coast - Karnataka and Kerala; 5, SE coast - Tamil Nadu and adjacent islands in the Gulf of Mannar; 6, NE coast - Andhra Pradesh, Orissa and West Bengal; 7, Andaman Islands; 8, Nicobar Islands; 9, Bay of Bengal - off-shore waters.

Thomas, 1985: 352, pl. VIII, fig. 20 (Gulf of Mannar and Palk Bay) (5).

Genus *Plakina* Schulze. *P. acantholopha* Thomas, 1970c: 53, fig. 3; Thomas, 1985: 354, pl. IX, fig. 3 (Palk Bay) (5). *P. monolopha* Schulze; Thomas, 1970c: 208, fig. 10; Thomas, 1970c: 52, fig. 1; Thomas, 1985: 353, pl. VIII, fig. 22 (Palk Bay) (5). *P. trilopha* Schulze; Thomas, 1970c: 53, fig. 2; Thomas, 1985: 353, pl. IX, fig. 1 (Gulf of Mannar) (5).

Genus *Plakinastrella* Schulze. *P. ceylonica* (Dendy, 1905); Thomas, 1985: 351, pl. VIII, fig. 17 (Gulf of Mannar, as *Dercitopsis ceylonica*) (5). *P. minor* (Dendy, 1905); Thomas 1985: 351, pl. VIII, fig. 18 (Gulf of Mannar and Palk Bay, as *Dercitopsis minor*) (5).

Subclass Tetractinomorpha
Order Spirophorida
Family Tetillidae Sollas

Genus *Cinachyra* Sollas. *C. arabica* (Carter); Burton & Rao, 1932: 326; Pattanayak, 1998 (Camorta I., Nicobars, Krusadai I., Andamans) (5,7). *C. australiensis* (Carter); Burton & Rao, 1932; Pattanayak, 1998 (Andamans) (7). *C. cavernosa* (Lamarck); Burton, 1937: 12; Rao, 1941: 425, (Gulf of Mannar and Palk Bay, as *Chrotella australiensis*); Thomas, 1985: 341, pl.

VII, fig. 21 (Gulf of Mannar and Palk Bay); Thomas, 1984: 101, fig. 1h (SE coast of India) (5,9). *C. hirsuta* (Dendy); Burton, 1930: 666 (Gulf of Mannar) (5).

Genus *Paratetilla* Dendy. *P. bacca* (Selenka); Kumar, 1925: 218; Burton & Rao, 1932: 325 (Kilakarai, Ramnad Dt.); Burton & Rao, 1932: 325, Pattanayak, 1998 (Andamans); Thomas, 1980b: 16 (Minicoy I.); Thomas, 1985: 342, pl. VII, fig. 22 (Gulf of Mannar and Palk Bay)) (2,5,7).

Genus *Samus* Gray. *S. anonyma*, Gray; Carter 1880: 59; Thomas, 1985: 354, pl. IX, fig. 3 (Gulf of Mannar) (5).

Genus *Tetilla* Schmidt. *T. barodensis* Dendy, 1916b: 105, pl. 1, fig. 3a-d (Off Dwarka, Okhamandal) (3). *T. cranium* (Müller); Burton & Rao, 1932: 326 (Invisible bank, Andamans; 2-3 miles W of Cape Comorin) (5,7). *T. dactyloidea* (Carter); Annandale, 1915c: 53, pl. V, fig. 4 (Chilka Lake, Orissa, as *T. dactyloidea* var. *lingua*); Dendy, 1916b: 102, pl. II, fig. 10a-c (Balapur, Okhamandal); Burton & Rao, 1932: 326; Pattanayak, 1998 (Port Blair, Andamans) (3,6,7). *T. hirsuta* (Dendy); Dendy, 1916b: 104 (Vamiani Point, off Okhamandal) (3). *T. pilula* Dendy, 1916b: 104, pl. I, fig. 2a-c (Okhamandal) (3).

Family **Scleritodermidae** Sollas

Genus *Aciculites* Schmidt. *A. orientalis* Dendy, 1905; Thomas, 1985: 323, pl. VI, fig. 26 (Gulf of Mannar) (5).

Genus *Amphibleptula* Schmidt. *A. herdmanni* (Dendy, 1905); Thomas, 1985: 255, pl. II, fig. 28 (Gulf of Mannar, as *Taprobane herdmanni*).

Order **Astrophorida**Family **Ancorinidae** Schmidt

Genus *Ancorina* Schmidt. *A. simplex* (Lendenfeld); Kumar, 1925: 213 (Ramnad Dist., S India) (5).

Genus *Asteropus* Sollas. *A. simplex* (Carter); Dendy, 1916b: 98 (Okhamandal); Kumar, 1925: 212 (Orissa Coast); Thomas, 1985: 326, pl. VI, fig. 30 (Gulf of Mannar and Palk Bay, as *Stelleti-nopsis simplex*) (3,5,6).

Genus *Ecionemia* Bowerbank. *E. acervus* Bowerbank, 1863; Burton & Rao, 1932: 318 (Andaman and Nicobar Is, as *E. carteri*; Kilakarai); Burton, 1937: 5 (Krusadai I., as *E. bacilifera*); Thomas, 1980b: 15 (Minicoy I.) ; Thomas, 1985: 334, pl. VII, fig. 6 (Gulf of Mannar) (2,5,7,8). *E. laviniensis* Dendy, 1905; Thomas, 1985: 335, pl. VII, fig. 7 (Gulf of Mannar) (5). *E. thielei* Thomas, 1980b: 15, fig. 2c (Minicoy I.) (2).

Genus *Myriastrea* Sollas. *M. clavosa* (Ridley); Dendy & Burton, 1926: 246; Burton & Rao, 1932: 331 (off Cinque I., Andamans, as *Stelletta clavosa*); Thomas, 1985: 336, pl. VII, fig. 9 (Gulf of Mannar) (5,7). *M. purpurea* (Ridley); Burton & Rao, 1932: 310 (Tuticorin, Nicobar I., as *Stelletta purpurea*); Burton, 1937: 4 (Krusadai I., as *Stelletta purpurea*); Rao, 1941: 418; Thomas, 1985: 336, pl. VII, fig. 8 (Gulf of Mannar); Pattanayak, 1998 (Andaman and Nicobar Is) (5,7,8).

Genus *Penares* Gray. *P. intermedia* (Dendy, 1905); Thomas, 1984: 100, fig. 1j,k (SE coast of India); Thomas, 1985: 334, pl. VII, fig. 5 (Gulf of Mannar) (5,9).

Genus *Rhabdastrella* Thiele. *R. globostellata* (Carter); Burton & Rao, 1932: 317 (Aberdeen Reef, Andaman, as *Aurora globostellata*); Thomas, 1984: 100 (SE coast of India, as *Aurora globostellata*); Thomas, 1985: 336, pl. VII, fig. 10 (Palk Bay, as *Aurora globostellata*) (5,7,9). *R. providentiae* (Dendy); Thomas, 1985: 337, pl. VII, fig. 11 (Gulf of Mannar and Palk Bay, as *Aurora providentiae*) (5). *R. rowi* Dendy, 1916b;

Burton & Rao, 1932: 317 (Ganjam Coast, as *Aurora rowi*) (6).

Genus *Stelletta* Schmidt. *S. aruensis* Hentschel, 1912; Burton & Rao, 1932: 312 (Ganjam coast) (6). *S. cavernosa* (Dendy, 1916b); Burton & Rao, 1932: 311 (Nicobar I.) (8). *S. haeckeli* (Sollas); Dendy, 1916b: 97 (Okhamandal, as *Myriastrea (Pilochrota) haeckeli*); Dendy & Burton, 1926: 246 (Interview I., Andamans (3,7)). *S. herdmanni* Dendy, 1905; Thomas, 1985: 338, pl. VII, fig. 13 (Gulf of Mannar) (5). *S. orientalis* Thiele; Burton and Rao, 1932: 311 (Andamans) (7). *S. tethyopsis* Carter, 1880: 137, pl. 6, figs 39,40; Thomas, 1985: 337, pl. VII, fig. 12 (Gulf of Mannar) (5). *S. validissima* Thiele; Burton and Rao, 1932: 310; Dendy & Burton, 1926: 241; Pattanayak, 1998 (Andamans) (7). *S. vestigium* Dendy, 1905; Thomas, 1985: 338, pl. VII, fig. 14 (Gulf of Mannar) (5).

Family **Coppatiidae** Topsent

Genus *Cryptotethya* Dendy. *C. agglutinans* Dendy, 1905; Thomas, 1985: 328, pl. VI, fig. 36 (Gulf of Mannar) (5).

Genus *Jaspis* Gray. *J. bouilloni* Thomas, 1973: 65, pl. 3, fig. 15; Thomas, 1985: 327, pl. VI, fig. 37 (Gulf of Mannar) (5). *J. investigatrix* (Annan-dale, 1915b: 460, pl. 34, figs 1,2) (Gulf of Mannar, as *Coppatius investigatrix*); Thomas, 1985: 327, pl. VI, fig. 33 (Gulf of Mannar) (5). *J. penetrans* (Carter, 1880: 141, pl. 7, fig. 44) (as *Tisiphonia penetrans*); Thomas, 1972: 352, pl. I, fig. 6A,B; Thomas, 1985: 326, pl. VI, fig. 32 (Gulf of Mannar) (5). *J. reptans* (Dendy, 1905); Thomas, 1985: 327, pl. VI, fig. 31 (Gulf of Mannar); Dendy, 1916b: 97 (Okhamandal) (3,5).

Genus *Zaplethea* de Laubenfels. *Z. diagnoxea* var. *diastra* Vacelet and Vasseur; Thomas, 1985: 328, pl. VI, fig. 35 (Gulf of Mannar and Palk Bay) (5).

Family **Geodiidae** Gray

Genus *Erylus* Gray. *E. carteri* Sollas; Carter, 1880: 15, pl. 7, fig. 41 (as *Stelletta euastrum*); Thomas, 1985: 341, pl. VII, fig. 20 (Gulf of Mannar) (5). *E. lendenfeldi* Sollas; Burton & Rao, 1932: 320; Pattanayak, 1998 (Andamans) (7).

Genus *Geodia* Lamarck. *G. areolata* Carter, 1880: 133, pl. 6, figs 36-37; Thomas, 1985: 339, pl. IX, fig. 8 (Gulf of Mannar); Burton, 1937: 8, pl. I, fig. 3 (Krusadai I.) (5). *G. globostellifera* Carter, 1880: 134, pl. 6, fig. 38; Thomas, 1985: 340, pl. VII, fig. 18 (Gulf of Mannar) (50). *G.*

inconspicua (Bowerbank); Burton & Rao, 1932: 322 (Kilakarai, Romnad Dist.; Ganjam coast; Gulf of Mannar); Thomas, 1985: 339, pl. VII, fig. 16 (Gulf of Mannar) (5,6). *G. lindgreni* (Lendenfeld); Thomas, 1980b: 16 (Minocoy I.); Thomas, 1985: 340, pl. VII, fig. 1a (Gulf of Mannar and Palk Bay) (2,5). *G. perarmata* Bowerbank; Carter, 1880: 131, pl. 6, figs 32-35; Thomas, 1985: 339, pl. VII, fig. 15 (Gulf of Mannar) (5). *G. picteti* (Topsent); Burton, 1937: 9 (Krusadai I.) (5). *G. ramodigitata* Carter, 1880: 133, pl. 34, fig. 31; Thomas, 1985: 340, pl. VII, fig. 17 (Gulf of Mannar) (5). *G. variospiculosa* Thiele; Dendy, 1916b: 99 (Okhamandal) (3).

Family Pachastrellidae Carter

Genus *Dercitus* Gray. *D. simplex* (Carter); Burton & Rao, 1932: 309 (Invisible Bank, Andamans, as *D. plicatus* var. *simplex*).

Genus *Halina* Bowerbank. *H. extensa* (Dendy, 1905); Thomas, 1985: 349, pl. VIII, fig. 13 (Gulf of Mannar) (5). *H. plicata* (Schmidt); Carter, 1880: 60 (as *Samus simplex*); Thomas, 1970a: 207, fig. 9; Thomas, 1985: 349, pl. VIII, fig. 12 (Gulf of Mannar) (5).

Genus *Pachamplulla* Lendenfeld. *P. dendyi* Hentschel; Thomas, 1977: 119, fig. 1D,E; Thomas, 1985: 351, pl. VIII, fig. 19 (Gulf of Mannar) (5).

Genus *Pachastrella* Schmidt. *P. parasitica* Carter, 1880: 60 (as *Samus (Pachastrella) parasitica*); Thomas, 1985: 350, pl. VIII, fig. 15 (Gulf of Mannar) (5). *P. nana* (Carter, 1880: 138, pl. 7, fig. 4) (as *Tisiphonia nana*); Thomas, 1985: 350, pl. VIII, fig. 16 (as *Netheia nana*) (Gulf of Mannar) (5).

Genus *Poecillastra* Sollas. *P. eccentrica* Dendy & Burton, 1926: 238; Pattanayak, 1998 (Andamans) (7). *P. schulzei* Sollas; Thomas, 1970: 208, fig. 8, 8a, 8b; Thomas, 1985: 355, pl. IX, fig. 4 (Gulf of Mannar) (5). *P. tenuilaminaris* Sollas; Dendy and Burton, 1926: 238; Burton & Rao, 1932: 309; Pattanayak, 1998 (Andamans) (7).

Genus *Splinctrella* Schmidt. *S. annulata* (Carter, 1880: 140, pl. 5, fig. 28) (as *Tisiphonia annulata*); Thomas 1985: 349, pl. VIII, fig. 14 (Gulf of Mannar) (5).

Family Theneidae Sollas

Genus *Thenia* Gray. *T. andamanensis* Dendy & Burton, 1926: 235; Pattanayak, 1998 (Andamans) (7).

Order Hadromerida Family Chondrillidae Gray

Genus *Chondrilla* Schmidt. *C. agglutinans* Dendy, 1916a: 102, pl. 1, fig. 1a,b (Okhamandal) (3). *C. australiensis* Carter; Dendy, 1916b: 101 (Okhamandal); Burton and Rao, 1932: 325 (Ganjam coast, Krusadai I.); Thomas, 1985: 355, pl. IX, fig. 5 (Gulf of Mannar) (3,5,6). *C. kilakaria* Kumar, 1925: 214, fig. 1 (Kilakarai, Ramnad Dt.); Thomas, 1985: 356, pl. IX, fig. 7 (Gulf of Mannar) (5). *C. sacciformis* Carter; Thomas, 1985: 356, pl. IX, fig. 6 (Palk Bay) (5).

Genus *Chondrosia* Nardo. *C. reniformis* Nardo; Burton & Rao, 1932: 324 (Pearl Oyster Bank, Tuticorin); Burton, 1937: 10 (Krusadai I.); Rao, 1941: 424; Thomas, 1985: 358 (Gulf of Mannar) (5).

Family Clionidae Gray

Genus *Annandalea* Thomas. *A. laeviastr* (Annandale, 1915: 462, fig. 2); Thomas, 1979: 179, fig. 5F (Bay of Bengal) (6).

Genus *Cliona* Grant. *C. anulifera* Annandale, 1915; Thomas, 1979a: 178, fig. 1N, 4G, 5I,J,K, pl. 2, fig. 9 (Gulf of Mannar) (5). *C. carpentari* Hancock; Thomas, 1975: 122 (Zuari and Mandovi Estuary, Goa); Thomas, 1979a: 175 (Port Blair, Andamans); Thomas, 1985: 319, pl. VI, fig. 17 (Gulf of Mannar and Palk Bay); Thomas, Ramadoss & Vincent, 1993: 145 (Coast of Kerala and Tamil Nadu) (3,4,5,7). *C. celata* Grant; Thomas, 1975: 120 (Zuari and Mandovi Estuary, Goa); Thomas: 11 (Minicoy I.); Thomas, 1985: 317, pl. VI, fig. 12 (Gulf of Mannar and Palk Bay); Thomas, Ramadoss & Vincent, 1993: 145 (Coast of Kerala and Tamil Nadu) (2,3,4,5). *C. coronaria* (Carter); Dendy, 1916b: 132 (Okhamandal) (3). *C. ensifera* Sollas; Thomas, 1979a: 176; Thomas, 1985: 320, pl. VI, fig. 18 (Gulf of Mannar); Pattanayak, 1998 (Andamans) (5,7). *C. kenpi* Annandale, 1915b: 462, fig. 2; Thomas, 1979a: 179, fig. 5E (Andamans) (7). *C. lobata* Hancock; Burton, 1937: 16; Thomas, 1979a: 172, fig. 2N; Thomas, 1985: 318, pl. VI, fig. 14 (Gulf of Mannar); Thomas, Ramadoss & Vincent, 1993: 145 (Coast of Kerala and Tamil Nadu); Pattanayak, 1998 (Andamans) (4,5,7). *C. margaritifera* Dendy, 1905; Annandale, 1915b: 9; Thomas, 1972: 348, pl. III, fig. 1; Thomas, 1985: 321, pl. VI, fig. 21 (Palk Bay); Thomas, 1975: 122 (Zuari and Mandovi estuary, Goa); Thomas, Ramadoss & Vincent, 1993: 145 (Coast of Kerala and Tamil Nadu) (3,4,5). *C. mucronata* Sollas; Thomas, 1972: 347, pl. 1, fig. 8A,B,C,D;

Thomas, 1979a: 175, fig. 32, fig. 4I,J; Thomas, 1985: 320, pl. VI, fig. 19 (Gulf of Mannar); Pattanayak, 1998 (Andamans) (5,7). *C. orientalis* Thiele; Thomas, 1972: 347, pl. II, fig. 2A,B; Thomas, 1979a: 177, fig. 1M, fig. 4F, pl. IV, fig. 1; Thomas 1985: 321, pl. VI, fig. 20 (Gulf of Mannar) (5). *C. quadrata* Hancock; Carter, 1880: 370, pl. 18, fig. 6; Thomas, 1972: 349, pl. III, fig. 1; Thomas, 1979a: 174, fig. 5,D; Thomas, 1985: 319, pl. VI, fig. 15 (Gulf of Mannar); Pattanayak 1998 (Andamans) (5,7). *C. vastifica* Hancock; Annandale, 1915b: 37, pl. IV, fig. 7 (Chilka Lake, Orissa); Thomas, 1972: 345, pl. I, fig. 3,3A,3B; Thomas, 1985: 318, pl. VI, fig. 13 (Gulf of Mannar and Palk Bay); Thomas, 1975: 121; Thomas and Thanapati, 1980: 54 (Zuari and Mandovi Estuary, Goa); Thomas, 1980b: 12 (Minicoy I.); Thomas, Ramadoss & Vincent, 1993: 145 (Coast of Kerala and Tamil Nadu); Pattanayak, 1998 (Andamans) (2,3,4,5,6,7). *C. viridis* Schmidt; Thomas, 1972: 349, pl. II, fig. 1; Thomas, 1979a: 174, fig. 1F; Thomas, 1985: 319, pl. VI, fig. 16 (Gulf of Mannar and Palk Bay); Kumar, 1925: 228 (Kilakarai, Ramnad Dt.) (5).

Genus *Delectona* de Laubenfels. *D. higgini* (Carter, 1880: 58, pl. 5, fig. 25); Thomas, 1972: 351, pl. III, fig. 4; Thomas, 1985: 322, pl. VI, fig. 24 (Gulf of Mannar) (5).

Genus *Donotella* Dendy. *D. acustella* (Annandale, 1915b: 14, fig. 2) (Ganjam coast) (6).

Genus *Dotona* Carter. *D. pulchella* Carter, 1880: 57, pl. 5, fig. 24; Thomas, 1979a: 180, fig. 5f; Thomas, 1985: 323, pl. VI, fig. 25 (Gulf of Mannar) (5).

Genus *Thooce* de Laubenfels. *T. socialis* (Carter, 1880: 56, pl. 5, fig. 23) (as *Thoosa socialis*); Thomas, 1972: 350, pl. 3, fig. 5; Thomas, 1985: 322, pl. VI, fig. 23 (Gulf of Mannar) (5).

Genus *Thoosa* Hancock. *T. (Cliothosa) armata* (Topsent); Thomas, 1979a: 181, figs 2A, 3B (Bay of Bengal) (9). *T. (Cliothosa) fischeri* (Topsent); Thomas, 1985: 321 (Gulf of Mannar and Palk Bay) (5). *T. (Cliothosa) hancocki* (Topsent); Thomas, 1979a: 180, fig. 1p (Bay of Bengal); Pattanayak, 1998 (Andamans) (7,9). *T. (Cliothosa) investigatoris* (Annandale, 1915b); Thomas, 1985: 322, pl. VI, fig. 22 (Gulf of Mannar and Palk Bay) (5).

Family Latrunculiidae Topsent

Genus *Latrunculia* Bocage. *L. tenuistellata* (Dendy, 1905); Thomas, 1985: 299, pl. V, fig. 12 (Gulf of Mannar) (5).

Family Placospongiidae Gray

Genus *Placospongia* Gray. *P. corinata* (Bowerbank); Dendy, 1916b: 132 (Okhamandal); Burton, 1937: 16; Thomas, 1985: 314, pl. VI, fig. 8 (Gulf of Mannar); Thomas, 1980: 11 (Minicoy I.) (2,3,5). *P. melobesioides* Gray; Thomas, 1985: 313, pl. VI, fig. 7 (Gulf of Mannar) (5).

Family Polymastiidae Gray

Genus *Polymastia* Bowerbank. *P. gemmipara* Dendy, 1916b: 135, pl. I, fig. 9a,b (Okhamandal) (3).

Family Spirastrellidae Ridley & Dendy

Genus *Spirastrella* Schmidt. *S. andamanensis* Pattanayak, 1998 (Andamans) (7). *S. aurivilli* Lindgren; Thomas, 1972: 340, pl. 1, fig. 4A-C; Thomas, 1979a: 185, figs 10,4L; Thomas, 1985: 306, pl. V, fig. 25 (Gulf of Mannar) (5). *S. coccinea* (Duch & Mich.); Thomas, 1985: 304, pl. V, fig. 21 (Gulf of Mannar) (5). *S. cuspidifera* (Lamarck); Thomas, 1972: 338; Thomas, 1979a: 183; Thomas, 1985: 305, pl. V, fig. 22 (Gulf of Mannar and Palk Bay); Thomas, 1980b: 9 (Minicoy I.) (2,5). *S. florida* Lendenfeld; Kumar, 1925: 227 (Kilakarai and Gulf of Mannar) (5). *S. inconstans* (Dendy); Burton, 1937: 14; Thomas, 1972: 339; Thomas, 1979a: 183, fig. 1F, 4M; Thomas, 1985: 305, pl. V, fig. 23 (Gulf of Mannar); Thomas, 1980b: 10 (Minicoy I.); Pattanayak, 1998 (Andaman and Nicobar I.) (2,5,7). *S. pachyspira* Levi; Thomas, 1968f: 265; Thomas, 1985: 306, pl. V, fig. 24 (Gulf of Mannar) (5). *S. punctulata* Ridley; Kumar, 1925: 228 (Kilakarai and Gulf of Mannar) (5). *S. vagabunda* var. *tubulodigitata* Dendy, 1916b: 132 (Okhamandal) (3).

Family Suberitidae Schmidt

Genus *Aaptos* Gray. *A. aaptos* (Schmidt, 1864); Dendy, 1916b: 101 (Okhamandal, as *Tuberella aaptos*); Burton, 1937: 13; Thomas, 1985: 313, pl. VI, fig. 5 (Gulf of Mannar); Thomas, 1980b: 10 (Minicoy I.) (2,3,5). *A. unispiculus* (Carter, 1880: 45, pl. 4, fig. 8); Thomas, 1985: 313, pl. VI, fig. 6 (Gulf of Mannar) (5).

Genus *Laxosuberites* Topsent. *L. aquaedulcoris* (Annandale); Annandale, 1915c: 42, pl. iv, figs 5,6 (Chilka Lake, Orissa) (6). *L. conulosus* Burton, 1930: 669; Thomas, 1985: 311 (Gulf of Mannar) (5). *L. cruciatus* (Dendy, 1905); Dendy, 1916: 135 (Okhamandal as *Suberites cruciatus*); Kumar, 1925: 229 (Waltair, as *Suberites cruciatus* var. *depressa*); Burton, 1937: 14;

Thomas, 1985: 310, pl. VI, fig. 1 (Gulf of Mannar); Thomas, 1980b: 10 (Minicoy I.) (2,3,5,6). *L. lacustris* Annandale, 1915: 45, pl. V, figs 2,3 (Chilka Lake, Orissa); Burton, 1937: 14; Thomas, 1985: 311, pl. VI, fig. 2 (Gulf of Mannar) (5,6). *L. proteus* (Hentschel); Burton, 1930: 669 (Gulf of Mannar) (5).

Genus *Pseudosuberites* Topsent. *P. andrewsi* Kirkpatrick; Burton, 1937: 14; Rao, 1941: 425; Thomas, 1985: 312, pl. VI, fig. 3 (Gulf of Mannar) (5).

Genus *Suberites* Nardo. *S. caruosus* (Johnston); Dendy, 1916b: 134 (Okhamandal); Rao, 1941: 426; Thomas, 1985: 310, pl. V, fig. 35 (Gulf of Mannar); Thomas, 1980b: 10 (Minicoy I.) (2,3,5). *S. flabellatus* Carter; Dendy, 1916b: 135 (Okhamandal) (3). *S. sericeus* Thiele; Annandale, 1915c: 36, pl. IV, fig. 4 (Chilka lake, Orissa) (6). *S. tylobtusa* Lévi; Thomas, 1985: 310, pl. V, fig. 36 (Gulf of Mannar) (5).

Genus *Terpios* Duchassaing & Michelotti. *T. fugax* Duch. & Mich.; Burton, 1937: 15; Thomas, 1985: 312, pl. VI, fig. 4 (Gulf of Mannar) (5).

Family Tethyidae Gray

Genus *Tethya* Lamarck. *T. andamanensis* (Dendy & Burton, 1926: 248) (as *Donatia andamanensis*); Pattanayak, 1998 (Andamans) (7). *T. diploderma* Schmidt; Burton, 1937: 12; Thomas, 1985: 331, pl. VII, fig. 2 (Gulf of Mannar); Pattanayak, 1998 (Andaman and Nicobar Is) (5,7,8). *T. japonica* Sollas; Burton, 1937: 13; Thomas, 1985: 331, pl. VII, fig. 3 (Gulf of Mannar); Thomas, 1980b: 14 (Minicoy I.) (2,5). *T. repens* (Schmidt); Dendy & Burton, 1926: 247 (as *Donatia repens*); Pattanayak, 1998 (Andamans); Burton, 1937: 12; Thomas, 1985: 332, pl. VII, fig. 4 (Gulf of Mannar, as *Tethytimea repens*); Thomas, 1980b: 14 (Minicoy I.) (2,5,7). *T. robusta* Bowerbank; Burton, 1937: 13; Thomas, 1985: 330, pl. VII, fig. 1 (Gulf of Mannar); Thomas, 1980b: 12 (Minicoy I.), Pattanayak, 1998 (Andamans) (2,5,7). *T. seychellensis* (Wright); Dendy, 1916b: 100 (Okhamandal, as *Donatia seychellensis*) (3).

Genus *Xenospongia* Gray. *X. patelliformis* Gray; Thomas, 1985: 309, pl. V, fig. 34 (Gulf of Mannar) (5).

Family Timeidae Topsent

Genus *Kotimea* de Laubenfels. *K. moorei* (Carter, 1880: 50, pl. 4, fig. 11); Thomas, 1985: 309, pl. V, fig. 33 (Gulf of Mannar) (5).

Genus *Timea* Gray. *T. capitatostellifera* (Carter, 1880: 51, pl. 4, fig. 12); Thomas, 1985: 307, pl. V, fig. 30 (Gulf of Mannar) (5). *T. curvistellifera* (Dendy, 1905); Thomas, 1985: 308, pl. V, fig. 31 (Gulf of Mannar) (5). *T. spinatostellifera* (Carter, 1880: 51, pl. 4, fig. 13); Thomas, 1985: 307, pl. V, fig. 29 (Gulf of Mannar) (5). *T. stellata* (Bowerbank); Burton, 1937: 15; Thomas, 1985: 307, pl. V, fig. 26 (Gulf of Mannar) (5). *T. stelligera* (Carter); Thomas, 1985: 307, pl. V, fig. 27 (Gulf of Mannar and Palk Bay) (5). *T. stellivarians* (Carter, 1880: 50, pl. 4, fig. 10a-c); Thomas, 1985, pl. v, fig. 32 (Gulf of Mannar) (5).

Order Lithistida

Suborder Triaenosina

Family Corallistidae Sollas

Genus *Corallistes* Schmidt. *C. aculeata* Carter, 1880: 143, pl. 7, fig. 45; Thomas, 1985: 343, pl. VIII, fig. 1 (Gulf of Mannar) (5). *C. elegantissima* Carter, 1880: 144, pl. 7, fig. 47; Thomas, 1985: 343, pl. VIII, fig. 2 (Gulf of Mannar) (5). *C. verucosa* Carter, 1880: 144, pl. 4, fig. 46; Thomas, 1985: 343, pl. VIII, fig. 3 (Gulf of Mannar) (5).

Family Theonellidae Lendenfeld

Genus *Discodermia* du Bocage. *D. enigmatica* Dendy, 1905; Thomas, 1985: 345, pl. VIII, fig. 9 (Gulf of Mannar) (5). *D. gorgonoides* Burton, 1928: 109; Pattanayak, 1998 (Andamans) (7). *D. interspersa* Kumar, 1925: 215 (Ganjam coast) (6). *D. laevidiscus* Carter, 1880: 149, pl. 8, fig. 51; Thomas, 1985: 344, pl. VIII, fig. 6 (Gulf of Mannar) (5). *D. papillata* Carter, 1880: 146, pl. 8, fig. 48; Thomas, 1985: 344, pl. VIII, fig. 4 (Gulf of Mannar); Burton & Rao, 1932: 305; Pattanayak, 1998 (Andamans) (5,7). *D. spinispirulifera* Carter, 1880: 148, pl. 8, fig. 50; Thomas, 1985: 344, pl. VIII, fig. 5 (Gulf of Mannar) (5). *D. sceptrifera* Carter, 1881: 372, pl. 18, fig. 2; Thomas, 1985: 345, pl. VIII, fig. 8 (Gulf of Mannar); Burton & Rao, 1932: 307 (Ganjam coast) (5,6). *D. sinuosa* Carter, 1887: 372, pl. 18, fig. 1; Thomas, 1985: 345, pl. VIII, fig. 7 (Gulf of Mannar) (5).

Genus *Theonella* Gray. *T. coupla* Burton, 1928: 110 (Laccadive I.) (2). *T. swinhoei* Gray; Burton & Rao, 1932: 308; Thomas, 1985: 346, pl. VIII, fig. 10 (Gulf of Mannar); Burton & Rao, 1932: 308; Pattanayak (Andamans) (5,7,8).

Suborder **Anoplina**
Family **Azoriceidae** Sollas

Genus *Leiodermatium* Schmidt. *L. pfefferae*; Burton, 1928 (Andamans, as *Azorica pfefferae*) (7).

Family **Desmanthidae** Topsent

Genus *Lophocanthus* Hentschel. *L. rhabdophorus* Hentschel; Burton, 1937: 11; Thomas, 1985: 348, pl. VIII, fig. 11 (Gulf of Mannar); Thomas, 1980b: 16, fig. 2f (Minicoy I.) (2,5).

Subclass **Ceractinomorpha**
Order **Agelasida**
Family **Agelasidae** Verrill

Genus *Agelas* Duchassing & Michelotti. *A. ceylonica* Dendy, 1905; Thomas, 1980: 3 (Minicoy I.); Thomas, 1985: 256, pl. II, fig. 30 (Gulf of Mannar) (2,5). *A. mauritiana* (Carter); Thomas, 1980a: 2 (Minicoy I.); Thomas, 1985: 256, pl. II, fig. 29 (Gulf of Mannar) (2,5).

Incertae Sedis Genus *Acanthostylotella* Burton & Rao. *A. cornuta* (Topsent); Thomas, 1985: 257, pl. II, fig. 31 (Gulf of Mannar) (5).

Order **Poecilosclerida**
Suborder **Microcionina**
Family **Iophonidae** Burton

Genus *Acarus* Gray. *A. souriei* (Levi); Thomas, 1970b: 46, figs 1,2a-h; Thomas, 1985: 263, pl. III, fig. 4 (Gulf of Mannar, as *Acanthiacarus souriei*) (5). *A. ternatus* Ridley; Thomas, 1985: 262, pl. III, fig. (Gulf of Mannar) (5). *A. thielei* Lévi; Thomas, 1970b: 44, figs 3a-g, 4; Thomas, 1985: 263, pl. III, fig. 3 (Gulf of Mannar) (5). *A. tortilis* Topsent; Dendy, 1916: 130 (Okhamandal) (3).

Genus *Cornulum* Carter. *C. vesiculatum* (Dendy, 1905); Thomas, 1968e: 260, fig. 1a-b; Thomas, 1985: 238, pl. I, fig. 33 (Gulf of Mannar) (5).

Genus *Damiria* Keller. *D. simplex* Keller; Thomas, 1985: 243, pl. II, fig. 8 (Gulf of Mannar) (5). *D. fistulatus* (Carter, 1880: 53, pl. 15, fig. 22); Thomas, 1985: 236, pl. I, fig. 31 (Gulf of Mannar, as *Xytopsene fistulatus*) (5).

Genus *Zyzzya* de Laubenfels. *Z. papillata* (Thomas, 1968e: 252, fig. 6-8); Thomas, 1985: 243, pl. II, fig. 12 (Gulf of Mannar, as *Damirina papillata*) (50).

Family **Microcionidae** Carter

Genus *Antho* Gray. Subgenus *Antho* (*Antho*) Gray. *A. (A.) mannarensis* (Carter, 1880: 37) (as

Dictyocylindrus mannarensis); Thomas, 1985: 257, pl. II, fig. 32 (as *Plocamilla mannarensis*) (Gulf of Mannar); Burton & Rao, 1932: 255 (Laccadive sea, as *Plocamia mannarensis*); Burton & Rao, 1932: 355 (off Mangalore, off Karwar) (2,4,5). *A. (A.) tuberosa* (Hentschel); Burton & Rao, 1932: 341 (Ganjam coast, E coast of India) (6).

Genus *Artemisina* Vosmaer. *A. indica* (Thomas, 1974: 312; Thomas, 1985: 287, pl. IV, fig. 19 (Gulf of Mannar, as *Qasimella indica*) (5).

Genus *Clathria* Schmidt. Subgenus *Clathria* (*Clathria*) Schmidt. *C. (C.) decumbens* (Ridley); Burton, 1937: 29; Thomas, 1985: 278, pl. IV, fig. 3 (Gulf of Mannar) (5). *C. (C.) indica* Dendy, 1905; Burton & Rao, 1932: 336; Thomas, 1985: 278, pl. IV, fig. 4 (Gulf of Mannar). *C. (C.) maeandrina* Dendy, 1905; Burton, 1930: 668 (Gulf of Mannar) (5). *C. (C.) prolifera* (Verrill); Burton & Rao, 1932: 344 (Mangalore, off Karwar, Arabian sea) (1,4).

Subgenus *Clathria* (*Dendrocia*) Hallman. *C. (D.) antyaja* Burton & Rao, 1932: 348 (Gulf of Mannar, as *Dendrocia antyaja*) (5).

Subgenus *Clathria* (*Microcionia*) Bowerbank. *C. (M.) aceratoobtusa* Carter; Thomas, 1985: 273, pl. III, fig. 20 (Gulf of Mannar) (5). *C. (M.) affinis* Carter, 1880: 41, pl. 4, fig. 15; Thomas, 1985: 273, pl. III, fig. 19 (Gulf of Mannar) (5). *C. (M.) atrasanguinea* Bowerbank; Burton, 1937: 30 (Krusadai I.); Burton & Rao, 1932: 344 (off Karwar, Arabian sea; Travancore, Kilakarai, Puri coast, Andamans); Thomas, 1985: 273, pl. III, fig. 18 (Gulf of Mannar); Pattanayak, 1998 (Andamans) (1,5,7). *C. (M.) fascispiculifera* (Carter, 1880: 44, pl. 4, fig. 7a-g); Thomas, 1985: 275, pl. III, fig. 24 (Gulf of Mannar) (5). *C. (M.) rhopalophora* (Hentschel); Thomas, 1970a: 206, fig. 7; Thomas, 1985: 274, pl. III, fig. 23 (Gulf of Mannar) (5).

Subgenus *Clathria* (*Thalysias*) Duch & Mich. *C. (T.) amiranteiensis* Burton, 1937: 29, pl. 3, fig. 20; Thomas, 1985: 276, pl. III, fig. 26 (Gulf of Mannar, as *Colloclathria ramosa*) (5). *C. (T.) encrusta* Kumar, 1925: 221 (Orissa coast) (6). *C. (T.) lendenfeldi* Ridley & Dendy, 1886; Burton & Rao, 1932: 334 (Tuticorin, Ganjam Coast) (5,6). *C. (T.) longitoxa* (Hentschel); Burton, 1937: 30; Thomas, 1985: 274, pl. III, fig. 22 (Gulf of Mannar) (5). *C. (T.) micropunctata* Burton & Rao, 1932: 340 (off Tuticorin) (5). *C. (T.) procera* (Ridley); Burton & Rao, 1932: 340 (Tuticorin, Cape Comorin, as *Tenacia procera*); Burton, 1937: 28; Thomas, 1985: 277, pl. IV, fig. 2 (Gulf

of Mannar) (5). *C. (T.) procera* var. *tessellata* (Dendy, 1905); Burton, 1937: 29 (Gulf of Mannar) (5). *C. (T.) reinwardti* (Vosmaer); Dendy, 1916b: 128 (Okhamandal) (3). *C. (T.) spiculosus* Dendy, 1889; Dendy, 1916b: 128 (Okhamandal) (3). *C. (T.) toxifera* (Heantschel); Burton, 1937: 31; Thomas, 1985: 274, pl. III, fig. 21 (Gulf of Mannar). *C. (T.) vulpina* (Lamarck); Dendy, 1916b: 128 (Okhamandal, as *Clathria corallitincta*); Burton & Rao, 1932: 337 (Tuticorin, Kilakarai, Andamans, as *Tenacia frondifera*); Burton, 1937: 27; Thomas, 1985: 277, pl. IV, fig. 1 (Gulf of Mannar); Pattanayak, 1998 (Andamans) (3,5,7).

Genus *Echinochalina* Thiele. Subgenus *Echinochalina* (Echinochalina) Thiele. *E. (E.) barba* (Lamarck); Thomas, 1977: 115; Hooper, 1996: 521 (Andaman sea) (7).

Genus *Echinoclathria* Carter. *E. rimosa* (Ridley); Thomas, 1985: 276, pl. III, fig. 27 (Gulf of Mannar) (5).

Genus *Holopsamma* Carter, 1885. *H. crassa* Carter; Thomas, 1985: 268 (Gulf of Mannar and Palk Bay) (5).

Family Raspailiidae Hentschel

Genus *Aulospongus* Norman. *A. sessilis* (Carter, 1880: 38) (as *Dictyocylindrus sessilis*); Thomas, 1985: 270, pl. III, fig. 11 (Gulf of Mannar) (5). *A. tubulatus* (Bowerbank); Burton & Rao, 1932: 347 (Tuticorin); Burton, 1937: 32; Thomas, 1985: 269, pl. III, fig. 10 (Gulf of Mannar) (5).

Genus *Cyamon* Gray. *C. quadriradiata* Carter, 1880: 42, pl. 4, fig. 4; Thomas, 1985, pl. II, fig. 33 (Gulf of Mannar) (5). *C. quinqueradiata* (Carter, 1880: 43, pl. 4, fig. 5); Thomas, 1985: 258, pl. II, fig. 34 (Gulf of Mannar) (5). *C. vickersii* (Bowerbank) Burton & Rao, 1932: 355 (Mangalore) (4).

Genus *Echinodictyum* Ridley. *E. asperum* Ridley & Dendy; Burton & Rao, 1932: 348; Pattanayak, 1998 (Andamans) (7). *E. clathrum* Dendy, 1905; Burton, 1937: 31; Rao, 1941: 451; Thomas, 1985, pl. II, fig. 18 (Gulf of Mannar) (5). *E. gorgonoides* Dendy, 1916b: 129 (Okhamandal); Burton & Rao, 1932: 348 (Tuticorin); Thomas, 1985: 251, pl. II, fig. 19 (Gulf of Mannar) (3,5). *E. longistylum* Thomas, 1968b: 246, pl. 2, fig. A,B; Thomas, 1985: 251, pl. II, fig. 20 (Gulf of Mannar); Thomas, 1980a: 1 (Minicoy I.) (2,5). *E. nervosum* Ridley, 1881; Burton & Rao, 1932: 348 (Ganjam coast) (6).

Genus *Endectyon* Topsent. *E. fruticosa* (Dendy, 1905); Thomas, 1985: 271, pl. III, fig. 15 (Gulf of

Mannar) (5). *E. lamellosa* Thomas, 1976a: 170, pl. I, figs 1A,B,C, figs 1a-d; Thomas, 1985: 272, pl. III, fig. 16 (Gulf of Mannar) (5). *E. thurstoni* (Dendy); Burton & Rao, 1932: 347 (Tuticorin, as *Hemectyon thurstoni*); Burton, 1937: 34; Thomas, 1985: 272, pl. III, fig. 17 (Gulf of Mannar) (5).

Genus *Eurypon* Gray. *E. clavatum* (Bowerbank); Thomas, 1985: 275, pl. III, fig. 25 (Gulf of Mannar) (5).

Genus *Raspailia* Nardo. Subgenus *Raspailia* (*Raspailia*) Nardo. *R. (R.) anastomosa* Kumar, 1925: 223 (Ganjam coast) (6). *R. (R.) fruticosa* Dendy; Kumar, 1925: 224 (Waltair) (6). *R. (R.) fruticosa* var. *teniramosa* Dendy, 1905; Dendy, 1916b: 130 (Okhamandal) (3). *R. (R.) hornelli* Dendy, 1905; Burton, 1937: 33; Thomas, 1985: 269, pl. III, fig. 9 (Gulf of Mannar) (5). *R. (R.) viminalis* (Schmidt); Burton & Rao, 1932: 342 (Puri coast, Andamans); Pattanayak, 1998 (Andamans) (6,7).

Genus *Thrinacophora* Ridley. *T. cervicornis* Ridley & Dendy; Dendy, 1916: 117 (off Dwarka) (3).

Family Rhabdermiidae Topsent

Genus *Rhabdermia* Topsent. *R. acanthostyla* Thomas, 1968b: 247, pl. 2, figs 4,5; Thomas, 1985: 271, pl. III, fig. 14 (Gulf of Mannar) (5). *R. indica* Dendy, 1905; Burton, 1937: 33; Thomas, 1985: 270, pl. III, fig. 12 (Gulf of Mannar) (5). *R. prolifera* Annadale, 1915b: 464, pl. 34, fig. 3 (Gulf of Mannar, Andamans, E coast of India); Thomas, 1985: 271, pl. III, fig. 13 (Gulf of Mannar) Pattanayak, 1998 (Andamans) (5,7,9).

Suborder Myxillina

Family Anchinoideae Topsent

Genus *Ectyobatzella* Burton & Rao. *E. enigmatica* Burton & Rao, 1932: 332, pl. XVIII, fig. 6; Pattanayak (1998) (Nicobar I.) (8).

Genus *Kirkpatrickia* Topsent. *K. spiculaphila* Burton & Rao, 1932: 332, pl. XVII, figs 5,5a; Pattanayak, 1998 (Andamans) (7).

Genus *Phorbas* Duchassaing & Michelotti. *P. dubia* Burton; Thomas, 1985: 252, pl. II, fig. 21 (Gulf of Mannar, as *Anchinoe dubia*) (5).

Family Coelosphaeridae Hentschel

Genus *Coelosphaera* Thomson. *C. encrusta* (Kumar, 1925: 220, fig. 3) (Kilakarai, as *Histoderma encrusta*); Thomas, 1985: 254, pl. II, fig. 24 (Gulf of Mannar) (5). *C. navicelligera*

(Ridley & Dendy); Thomas, 1985: 253 (Gulf of Mannar, as *Siderodermella navicelligera*) (5).

Genus *Ectyodoryx* Lundbeck. *E. lissostyla* Thomas, 1970a, p. 203, figs 1-3; Thomas, 1985: 260, pl. II, fig. 36 (Gulf of Mannar) (5).

Genus *Lissodendoryx* Topsent. *L. balanophilus* Annandale; Thomas, 1985: 266, pl. II, fig. 5 (Gulf of Mannar) (5). *L. similis* Thiele; Ali, 1956: 293 (Madras) (5). *L. sinensis* Brondsted; Burton, 1937: 26; Thomas, 1985: 266, pl. III, fig. 6 (Gulf of Mannar) (5). *L. ternatensis* (Thiele); Burton & Rao, 1932: 332 (Madras coast) (5).

Genus *Waldoschmittia* de Laubenfels. *W. schmidtii* (Ridley); Thomas, 1980a: 2 (Minicoy I.); Thomas, 1985: 252, pl. II, fig. 22 (Gulf of Mannar) (2,5).

Family Crambeidae Lévi

Genus *Psammocheila* Dendy. *P. elegans* Dendy, 1916: 126, pl. I, fig. 6, pl. III, fig. 22 (Okhamandal); Pattanayak, 1998 (Andamans) (3,7). *P. fibrosa* (Ridley); Thomas, 1985: 268, pl. III, fig. 8 (Gulf of Mannar) (5).

Family Hymedesmiidae Topsent

Genus *Hymedesmia* Bowerbank. *H. dendyi* Burton; Burton & Rao, 1932: 350 (Andamans) (7). *H. mannarensis* Thomas, 1970a: 204; Thomas, 1985: 261, pl. II, fig. 38 (Gulf of Mannar) (5). *H. mertonii* Hentschel; Thomas, 1968f: 264; Thomas, 1985: 260, pl. II, fig. 37 (Gulf of Mannar) (5). *H. stylophora* Thomas, 1970a: 204; Thomas, 1985: 261, pl. II, fig. 39 (Gulf of Mannar) (5). *H. tenuissima* (Dendy); Thomas, 1985: 261, pl. II, fig. 40 (Gulf of Mannar) (5).

Family Myxillidae Topsent

Genus *Damiriopsis* Burton. *D. brondstedii* Burton, 1928: 124 (Andamans) (7).

Genus *Desmapsamma* Burton. *D. anchorata* (Carter); Thomas, 1985: 267, pl. III, fig. 7 (Gulf of Mannar) (5).

Genus *Iotrochota* Ridley. *I. baculifera* Ridley; Dendy, 1916b: 123 (Okhamandal); Burton & Rao, 1932: 353 (Nicobars); Thomas, 1985: 235, pl. I, fig. 29 (Gulf of Mannar) (3,5,8).

Genus *Myxilla* Schmidt. Subgenus *Myxilla* (*Myxilla*) Schmidt. *M. (M.) arenaria* Dendy, 1905; Dendy, 1916b: 127 (Okhamandal); Thomas, 1985: 259, pl. II, fig. 35 (Gulf of Mannar) (3,5).

Family Phoriospongiidae Lendenfeld

Genus *Chondropsis* Carter. *C. kirkii* (Carter); Dendy, 1916b: 127 (Okhamandal) (3).

Genus *Strongylacidon* Lendenfeld. *S. stelliderma* (Carter); Rao, 1941: 449; Thomas, 1985: 237 (Gulf of Mannar) (5).

Family Tedaniidae Ridley & Dendy

Genus *Tedania* Gray. *T. (T.) anhelans* (Liberkühn); Burton & Rao, 1932: 353 (Andamans, Gulf of Mannar); Burton, 1937: 27; Ali, 1956: 293 (Madras); Thomas, 1980a: 4 (Minicoy I.); Thomas, 1985: 261, pl. III, fig. 1 (Gulf of Mannar); Pattanayak, 1998 (Andamans) (2,5,7).

Suborder Mycalina

Family Guitarridae Burton

Genus *Guitarra* Carter. *G. indica* Dendy, 1916b: 124, pl. I, fig. a-b, pl. III, fig. 21 (Okhamandal) (3).

Family Desmacellidae

Ridley & Dendy

Genus *Biemna* Gray. *B. annexa* (Schmidt); Burton, 1928: 120 (Laccadive sea) (2). *B. fistulosa* Topsent, Burton, 1937: 25; Thomas, 1985: 288, pl. IV, fig. 22 (Gulf of Mannar) (5). *B. fortis* (Topsent); Burton & Rao, 1930: 327 (Puri coast); Thomas, 1980a: 6 (Minicoy I.); Thomas, 1985: 288, pl. IV, fig. 21 (Gulf of Mannar) (2,5,6). *B. lipsosigma* Burton, 1928: 120; Pattanayak, 1998 (Andamans) (7). *B. microstyla* Thomas, 1984: 95, fig. 1b (Bay of Bengal, SE coast of India) (9). *B. tubulata* (Dendy, 1905); Burton & Rao, 1932, p. 327 (Andamans, Nicobars, Tuticorin); Thomas, 1985: 287, pl. IV, fig. 20 (Gulf of Mannar, as *Toxemna tubulata*) (5,7).

Genus *Desmacella* Schmidt. *D. tubulata* Dendy, 1905; Dendy, 1916b: 116 (Okhamandal) (3).

Family Mycalidae Lundbeck

Genus *Mycale* Gray. Subgenus *Mycale* (*Carmia*) Gray. *M. (C.) madraspatna* Annandale; Burton, 1937: 24 (Krusadai I.); Ali, 1956: 295 (Madras); Thomas, 1985: 285, pl. IV, fig. 15 (Gulf of Mannar, as *Carmia madraspatna*) (5). *M. (C.) monanchorata* (Burton & Rao, 1932: 329 (Kilakarai)); Rao, 1941: 447; Thomas, 1985: 284, pl. IV, fig. 13 (Gulf of Mannar) (5). *M. (C.) sulevoidea* Sollas; Thomas, 1968d: 256; Thomas, 1985: 284; pl. IV, fig. 14 (Gulf of Mannar and Palk Bay) (5).

Subgenus *Mycale* (*Mycale*) Gray. *M. (M.) aegagropila* (Johnston); Rao, 1941: 445 (Gulf of Mannar) (5). *M. (M.) aegagropila* var. *militaris* (Annandale); Ali, 1956: 295 (Madras) (5). *M. (M.) coronata* Dendy; Burton, 1928: 121 (Andamans) (7). *M. (M.) crassissima* (Dendy); Thomas, 1985: 282, pl. IV, fig. 10 (Gulf of Mannar) (5). *M. (M.) grandis* (Gray); Burton, 1937: 23; Thomas, 1985: 279, pl. IV, fig. 5 (Gulf of Mannar); Thomas, 1980a: 6 (Minicoy I.) (2,5). *M. (M.) graveleyi* Burton, 1937: 24; Thomas, 1985: 283, pl. IV, fig. 9 (Gulf of Mannar) (5). *M. (M.) indica* (Carter, 1887); Burton & Rao, 1932: 328; Pattanayak, 1998 (Andamans); Rao, 1941: 445 (Pamban, Gulf of Mannar) (5,7). *M. (M.) mannarensis* Thomas, 1968a: 255, fig. 1-2; Thomas, 1985: 283, pl. IV, fig. 12 (Gulf of Mannar) (5). *M. (M.) mytilorum* Annandale; Burton, 1937: 24; Thomas, 1985: 282 (Gulf of Mannar); Ali, 1956: 294 (Madras) (5). *M. (M.) plumosa* (Carter); Dendy, 1916b: 121 (Okhamandal) (3). *M. (M.) spongiosa* (Dendy); Burton, 1928: 119; Thomas, 1985: 279, pl. IV, fig. 6 (Gulf of Mannar) (5). *M. (M.) tenuispiculata* (Dendy, 1905); Burton, 1937: 23; Thomas, 1985: 280, pl. IV, fig. 7 (Gulf of Mannar) (5). *M. (M.) tricomaliensis* Rao, 1941: 447, pl. 12, fig. 19; Thomas, 1985: 283, pl. IV, fig. 11 (Gulf of Mannar) (5).

Genus *Paresperella* Dendy, 1905. *P. bidentata* Dendy, 1905; Burton, 1937: 26; Thomas, 1985: 286, pl. IV, fig. 18 (Gulf of Mannar) (5). *P. serratohamata* (Carter, 1880: 49, pl. 5, fig. 20a-d); Thomas, 1985: 286, pl. IV, fig. 17 (Gulf of Mannar) (5).

Genus *Zygomycale* Topsent. *Z. parishii* (Bowerbank); Burton & Rao, 1932: 328; Thomas, 1985: 285, pl. IV, fig. 16 (Gulf of Mannar and Palk Bay); Thomas, 1980: 6 (Minicoy I.) (2,5).

Order Halichondrida Family Axinellidae Carter

Genus *Acanthella* Schmidt. *A. cavernosa* Dendy; Burton, 1937: 36 (Gulf of Mannar); Thomas, 1980b: 9 (Minicoy I.); Thomas, 1984: 97 (Bay of Bengal, SE coast of India) (2,5,9). *A. megaspicula* Thomas, 1984: 99 (Bay of Bengal, SE coast of India) (9). *A. ramosa* Kumar, 1925: 224 (Ganjam coast) (6).

Genus *Auletta* Schmidt. *A. andamanensis* Pattanayak, 1998 (Andamans) (7). *A. elongata* Dendy, 1905; Burton, 1937: 37; Thomas, 1985: 302, pl. V, fig. 19 (Gulf of Mannar) (5). *A. elongata* var. *fruticosa* Dendy, 1916: 119 (

Okhamandal) (3). *A. lyrata* (Esper); Dendy, 1889: 92 (as *A. aurantiacea*); Burton, 1937: 34 (as *Axinella lyrata*); Thomas, 1985: 303 (as *Acanthella lyrata*) (Gulf of Mannar) (5). *A. lyrata* var. *glomerata* Dendy, 1905; Dendy, 1916b: 119 (Okhamandal) (3).

Genus *Axinella* Schmidt. *A. acanthelloides* Pattanayak, 1998 (Andamans) (7). *A. agariciformis* (Dendy, 1905); Thomas, 1985: 291, pl. IV, fig. 27 (Gulf of Mannar) (5). *A. bubarinoides* Dendy; Burton, 1937: 36; Thomas, 1985: 293, pl. V, fig. 3 (Gulf of Mannar) (5). *A. carteri* (Dendy, 1889); Burton, 1937: 35; Thomas, 1985: 290, pl. IV, fig. 24 (Gulf of Mannar) (5). *A. ceylonensis* (Dendy, 1905); Burton, 1937: 35; Thomas, 1985: 293, (Gulf of Mannar) (5). *A. conulosa* Dendy; Burton, 1937: 36 (Kruasada I., Gulf of Mannar) (5). *A. crassistylifera* (Dendy, 1905); Thomas, 1985: 293, pl. V, fig. 4 (Gulf of Mannar) (5). *A. donnani* (Bowerbank); Dendy, 1916b: 118 (Okhamandal, as *Phakellia donnani*); Burton, 1937: 35; Thomas, 1970a: 207; Thomas, 1985: 289 (Gulf of Mannar) (3,5). *A. dwissima* (Dendy, 1905); Thomas, 1985: 292 (Gulf of Mannar) (5). *A. halichondroides* Dendy, 1905; Thomas, 1985: 293, pl. V, fig. 1 (Gulf of Mannar) (5). *A. labyrinthica* Dendy, 1889: 88; Thomas, 1985: 290 (Gulf of Mannar) (5). *A. lamellata* (Dendy, 1905); Thomas, 1985: 291 (Gulf of Mannar) (5). *A. manus* Dendy, 1905; Thomas, 1985: 292, pl. IV, fig. 29 (Gulf of Mannar) (5). *A. symmetrica* Dendy, 1905; Thomas, 1985: 291, pl. IV, fig. 26 (Gulf of Mannar) (5). *A. tenuidigitata* Dendy, 1905; Thomas, 1985: 290, pl. IV, fig. 25 (Gulf of Mannar) (5). *A. virgultosa* Carter, 1887; Dendy, 1916b: 118 (off Dwarka) (3).

Genus *Bubaris* Gray. *B. columnata* Burton, 1928: 130 (Andaman sea) (7). *B. gorgonoides* Thomas, 1984: 96, fig. 1 f.g, pl. 1A (Bay of Bengal, SE coast of India) (9). *B. radiata* Dendy, 1916b: 131, pl. 1, fig. 8a,b, pl. IV, figs 24a,b (Okhamandal). *B. vermiculata* (Bowerbank); Carter, 1880: 46 (as *Hymerhaphia vermiculata* var. *erecta*); Thomas, 1985: 296, pl. V, fig. 6 (Gulf of Mannar) (5).

Genus *Monocrepidium* Topsent. *M. eruca* (Carter, 1880: 46, pl. 4, fig. 9a-c); Thomas, 1985: 297, pl. V, fig. 8 (Gulf of Mannar) (5).

Genus *Phakettia* Bowerbank. *P. ridleyi* (Dendy); Thomas, 1985: 294, pl. V, fig. 5 (Gulf of Mannar) (5).

Genus *Rhabdoploca* Topsent. *R. curvispiculifera* (Carter, 1880: 43, pl. 4, fig. 6) (as *Microcion curvispiculifera*); Thomas, 1985: 296, pl. V, fig. 7 (Gulf of Mannar) (5).

Family **Desmoxyidae** Hallmann

Genus *Higginsia* Higgin. *H. higgini* Dendy; Thomas, 1985: 298, pl. V, fig. 10 (Gulf of Mannar) (5). *H. mixta* (Hentschel); Thomas, 1977: 116 (Bay of Bengal); Thomas, 1985: 297, pl. V, fig. 9 (Gulf of Mannar) (5).

Genus *Myrmekioderma* Ehlers. *M. granulata* (Esper); Burton, 1930: 668 (as *Acanthoxifer ceylonensis*); Burton, 1937: 39; Thomas, 1985: 298, pl. V, fig. 11 (Gulf of Mannar); Thomas, 1980b: 8 (Minicoy I.) (2,5).

Family **Dictyonellidae**
Van Soest, Diaz & Pomponi

Genus *Liosina* Thiele. *L. paradoxa* Thiele; Burton, 1937: 39; Thomas, 1985: 236, pl. I, fig. 30 (Gulf of Mannar) (5).

Family **Halichondriidae** Vosmaer

Genus *Amorphinopsis* Carter. *A. arcotti* (Ali, 1956: 296) (Rayapuram coast, Madras, as *Prostylissa arcotti*) (5). *A. excavans* Carter; Thomas, 1972: 341, pl. 2, fig. 3; Thomas, 1979a: 168; Thomas, 1985: 316, pl. VI, fig. 9 (Gulf of Mannar) (5). *A. excavans* var. *digitifera* Annandale, 1915; Kumar, 1925: 225 (Waltair coast) (6). *A. foetida* (Dendy); Burton, 1937: 37; Thomas, 1985: 324, pl. VI, fig. 27 (Gulf of Mannar); Thomas, 1980b: 12 (Minicoy I.); Thomas, 1984: 99, fig. 1a (Bay of Bengal, SE coast of India); Pattanayak, 1998 (Andamans) (2,5,7,9). *A. kempfi* Kumar, 1925: 226 (Waltair) (6). *A. oculata* (Kieschnick); Burton, 1937: 38; Thomas, 1985: 325, pl. VI, fig. 28 (Gulf of Mannar, as *Prostylissa oculata*) (5).

Genus *Axinyssa* Lendenfeld. *A. flabelliformis* (Keller); Burton, 1937: 35; Thomas, 1985: 309, pl. VI, fig. 39 (Gulf of Mannar) (5).

Genus *Ciocalypta* Bowerbank. *C. dichotoma*, Dendy, 1916: 119, pl. III, fig. 18 (Okhamandal) (3). *C. penicillus* Bowerbank; Burton, 1937: 38 (as *Prostylissa heterostyla*); Thomas, 1985: 301, pl. V, fig. 17 (Gulf of Mannar) (5). *Ciocalypta polymastia* (Lendenfeld); Thomas, 1973b: 441; Thomas, 1980b: 8 (Minicoy I.) (5).

Genus *Collocalypta* Dendy. *C. digitata* Dendy, 1905; Thomas, 1985: 303, pl. V, fig. 20 (Gulf of Mannar) (5).

Genus *Epipolasis* de Laubenfels. *E. lapidiformis* (Dendy, 1905); Thomas, 1985: 329, pl. VI, fig. 38 (Gulf of Mannar) (5). *E. topsenti* (Dendy, 1905); Thomas, 1985: 329, pl. VI, fig. 37 (Gulf of Mannar) (5).

Genus *Halichondria* Fleming. *H. glabrata* Keller, 1891; Burton, 1937: 37; Thomas, 1985: 300, pl. V, fig. 14 (Gulf of Mannar and Palk Bay) (5). *H. panicea* Johnston; Dendy, 1916b: 112 (Okhamandal); Thomas, 1985: 300, pl. V, fig. 13 (Gulf of Mannar) (3,5). *H. reticulata* Baer; Dendy, 1916b: 113, pl. II, fig. 14a,b (Okhamandal) (3).

Genus *Hymeniacidon* Bowerbank. *H. petrosioides* Dendy, 1905; Thomas, 1985: 302, pl. V, fig. 18 (Gulf of Mannar) (5).

Genus *Petromica* Topsent. *P. massalis* Dendy, 1905; Thomas, 1985: 304 (Gulf of Mannar); Burton, 1928: 110; Pattanayak, 1998 (Andamans) (5,7).

Genus *Spongosorites* Topsent. *S. aplysinoides* (Dendy); Burton, 1937: 38; Thomas, 1985: 301, pl. V, fig. 16 (Gulf of Mannar as *Trachyopsis aplysinoides*) (5). *S. andamanensis* Pattanayak, 1998 (Andamans) (7). *S. cavernosa* (Topsent, 1896); Burton, 1937: 38 (Gulf of Mannar) (5). *S. halichondrioides* Dendy, 1905; Burton, 1928: 118; Pattanayak, 1998 (Andamans); Thomas, 1985: 300, pl. V, fig. 15 (Gulf of Mannar, as *Trachyopsis halichondrioides*) (5,7). *S. solida* Topsent; Burton, 1937: 38 (Gulf of Mannar) (5).

Genus *Topsentia* Berg. *T. nigrocitis* (Carter); Thomas, 1985: 325, pl. VI, fig. 29 (Gulf of Mannar) (5).

Order **Haplosclerida**
Family **Callyspongiidae**
de Laubenfels

Genus *Callyspongia* Duchassaing & Michelotti. *C. barodensis* Burton; Thomas, 1985: 250 (Gulf of Mannar) (5). *C. ceylonica* (Dendy, 1905); Thomas, 1985: 249, pl. II, fig. 17 (Gulf of Mannar) (5). *C. clathrata* (Dendy, 1905); Thomas, 1985: 249 (Gulf of Mannar) (5). *C. diffusa* (Ridley); Burton, 1930: 20; Rao, 1941: 432; Thomas, 1985: 247, pl. II, fig. 13 (Gulf of Mannar); Ali, 1956: 292 (Madras); Thomas, 1979b: 15 (Minicoy I.) (2,5). *C. fibrosa* (Ridley & Dendy); Burton, 1930: 669; Burton, 1937: 21; Thomas, 1985: 248, pl. II, fig. 14 (Gulf of Mannar) (5). *C. fistularis* (Topsent); Burton, 1937: 21; Thomas, 1985: 248 (Gulf of Mannar) (5). *C. pambanensis* Rao, 1941: 441; Thomas, 1985: 249, pl. II, fig. 16 (Gulf of Mannar) (5). *C. spinosissima* (Dendy, 1887); Burton, 1937: 21; Thomas, 1985: 248, pl. II, fig. 15 (Gulf of Mannar) (5).

Genus *Siphonochalina* Schmidt. *S. crassifibra* Dendy, 1889; Dendy, 1916b: 114 (Okhamandal) (3). *S. minor* Dendy, 1916b: 115, pl. II, fig. 15 (Okhamandal) (3).

Family **Chalinidae** Gray

Genus *Adocia* Gray. *A. carnosa* (Dendy, 1889); Burton, 1937: 19 (Gulf of Mannar) (5). *A. semifibrosa* (Dendy, 1916b: 110) Okhamandal, as *Reniera semifibrosa*; Burton, 1937: 19 (Gulf of Mannar) (3,5).

Genus *Gellius* Gray. *G. flagellifer* Ridley & Dendy; Burton, 1928: 114; Pattanayak, 1998 (Andamans) (7). *G. fibulatus* (Schmidt); Kumar, 1925: 218 (Waltair) (6). *G. fibulatus* var. *microsigma* Dendy, 1916b: 107 (Okhamandal) (3). *G. megastoma* Burton, 1928: 115; Pattanayak, 1998 (Andamans) (7). *G. ridleyi* Hentschel; Dendy, 1916b: 107 (Okhamandal) (3). *G. toxius* Kumar, 1925: 219 (Waltair) (6).

Genus *Haliclona* Grant. *H. camerata* (Ridley); Burton, 1937: 17; Thomas, 1985: 233, pl. I, fig. 23 (Gulf of Mannar) (5). *H. implexa* (Schmidt); Thomas, 1985: 233, pl. I, fig. 22 (Gulf of Mannar) (5). *H. madrepora* (Dendy, 1889); Burton, 1937: 17; Thomas, 1985: 233, pl. I, fig. 24 (Gulf of Mannar) (5). *H. obtusispiculifera* (Dendy, 1905); Burton, 1937: 17; Thomas, 1985: 234, pl. I, fig. 27 (Gulf of Mannar) (5). *H. oculata* (Linnaeus); Rao, 1941: 429; Thomas, 1985: 232, pl. I, fig. 20 (Gulf of Mannar) (5). *H. pigmentifera* (Dendy, 1905); Burton, 1937: 19 (as *Adocia pigmentifera*); Thomas, 1985: 234, pl. I, fig. 26 (Gulf of Mannar) (5). *H. tenuiramosa* (Burton, 1930: 666) (as *Chalina tenuiramosa*); Burton, 1937: 17; Thomas, 1985: 235, pl. I, fig. 28 (Gulf of Mannar) (5). *H. viridis* (Duch. & Mich.); Burton, 1937: 18; Thomas, 1985: 232, pl. I, fig. 21 (Gulf of Mannar) (5).

Genus *Reniera* Nardo. *R. delicatula* Ali, 1956: 290, figs 1,4 (Madras) (5). *R. fibroreticulata* Dendy, 1916b: 110 (Okhamandal) (3). *R. hornelli* Dendy, 1916b: 110 (Okhamandal) (3). *R. permollis* (Bowerbank); Dendy, 1916b: 109 (Okhamandal) (3). *R. topsenti* Thiele; Dendy, 1916b: 109 (Okhamandal) (3). *R. tuberosa* (Dendy); Kumar, 1925: 220 (Ganjam coast) (6).

Genus *Sigmadocia* de Laubenfels. *S. carnosa* (Dendy, 1905); Thomas, 1985: 240, pl. II, fig. 4 (Gulf of Mannar) (5). *S. fibulata* (Schmidt); Carter, 1880: 48; Thomas, 1985: 239, pl. II, fig. 1 (Gulf of Mannar); Thomas, 1979b: 15 (Minicoy I.) (2,5). *S. petrosioides* (Dendy, 1905); Thomas, 1985: 240, pl. II, fig. 3 (Gulf of Mannar) (5). *S. pumila* (Lendenfeld); Burton, 1937: 20, Rao, 1941: 431; Thomas, 1985: 240, pl. II, fig. 2 (Gulf of Mannar); Thomas, 1979: 15 (Minicoy I.) (2,5).

Genus *Toxadocia* de Laubenfels. *T. dendyi* (Burton); Thomas, 1985: 241 (Gulf of Mannar) (5). *T. ridleyi* (Dendy); Thomas, 1985: 241 (Gulf of

Mannar) (5). *T. toxius* (Topsent, 1897); Thomas, 1985: 241, pl. II, fig. 5 (Gulf of Mannar) (5).

Family **Niphatidae** Van Soest

Genus *Aka* de Laubenfels. *A. diagnoxea* Thomas, 1968c: 250; Thomas, 1979a: 168; Thomas, 1985: 317, pl. VI, fig. 11 (Gulf of Mannar) (5). *A. mimuta* Thomas, 1972: 343, pl. 2, figs 4,4a; Thomas, 1979a: 170; Thomas, 1985: 317, pl. VI, fig. 10 (Gulf of Mannar) (5).

Genus *Amphimedon* Duch. & Mich. *A. multiformis* (Dendy); Ali, 1956: 290 (Madras, as *Pachychalina multiformis* var. *mannarensis*) (5).

Genus *Gelliodes* Ridley. *G. cellaria* (Rao, 1941: 439) (as *Callyspongia cellaria* var. *fusca*); Thomas, 1985: 238, pl. I, fig. 32 (Gulf of Mannar) (5). *G. fibrosa* Dendy, 1905; Dendy, 1916b: 108 (Okhamandal); Thomas, 1985: 237 (Gulf of Mannar) (3,5). *G. fibulatus* (Carter); Burton, 1928: 115; Pattanayak, 1998 (Andamans) (7). *G. incrustans* Dendy, 1905; Thomas, 1985: 238 (Gulf of Mannar) (5).

Family **Phloeodictyidae** Carter

Genus *Calyx* Vosmaer. *C. clavata* Burton, 1928: 117; Pattanayak, 1998 (Andamans) (7).

Genus *Oceanapia* Norman. *O. arenosa* Rao, 1941: 443; Thomas, 1985: 255 (Gulf of Mannar); Ali, 1956: 292 (Madras) (5). *O. fistulosa* (Bowerbank); Carter, 1880: 37 (as *Desmacidon jeffreysii*); Rao, 1941: 443; Thomas, 1985: 254, pl. II, fig. 25 (Gulf of Mannar) (5). *O. media* (Thiele); Burton, 1937: 22; Thomas, 1985: 254, pl. II, fig. 26 (Gulf of Mannar) (5). *O. putridosa* Burton, 1928: 118 (Orissa coast, as *Phloeodictyon putridosa*) (6). *O. sagittaria* (Sollas); Thomas, 1985: 242, pl. II, fig. 6 (Gulf of Mannar) (5). *O. zoologica* (Dendy); Thomas, 1985: 254, pl. II, fig. 27 (Gulf of Mannar) (5).

Family **Petrosiidae** Van Soest

Genus *Petrosia* Vosmaer. *P. nigricans* Lindgren; Thomas, 1985: 246, pl. II, fig. 11 (Gulf of Mannar) (5). *P. similis* Ridley & Dendy; Burton, 1930: 666 (as *Chalina similis*); Thomas, 1985: 246, pl. II, fig. 10 (Gulf of Mannar) (5).

Genus *Strongylophora* Dendy. *S. durissima* Dendy, 1905; Thomas, 1985: 242, pl. II, fig. 7 (Gulf of Mannar) (5).

Genus *Xestospongia* de Laubenfels. *X. exigua* (Kirkpatrick); Burton, 1937: 17; Thomas, 1985: 234, pl. I, fig. 25 (Gulf of Mannar) (5). *X. testudinaria* (Lamarck); Burton, 1937: 22; Thomas,

1985: 246, pl. II, fig. 9 (Gulf of Mannar, as *Petrosia testudinaria*); Pattanayak, 1998 (Andamans) (5,7).

Order Dictyoceratida

Family Irciniidae Gray

Genus *Ircinia* Nardo. *I. aruensis* (Hentschel); Burton, 1937: 40 (Gulf of Mannar, as *Hircinia aruensis*) (5). *I. cactiformis* Rao, 1941: 459 (Gulf of Mannar) (5). *I. fusca* (Carter, 1880: 36); Burton, 1937: 40; Rao, 1941: 458 (Gulf of Mannar, as *Hircinia fusca*); Thomas, 1985: 224, pl. I, fig. 6 (Gulf of Mannar) (5). *I. ramodigitata* Burton; Rao, 1941: 458 (Gulf of Mannar) (5). *I. ramosa* (Keller); Burton, 1937: 40 (as *Hircinia ramosa*); Thomas, 1985: 224, pl. I, fig. 7 (Gulf of Mannar) (5). *I. tuberculata* (Poléjaeff); Thomas, 1985: 225, pl. I, fig. 8 (Gulf of Mannar) (5).

Family Thorectidae Bergquist

Genus *Cacospongia* Schmidt. *C. mollior* Schmidt; Thomas, 1985: 226, pl. I, fig. 11 (Gulf of Mannar) (5). *C. scalaris* Schmidt, 1862; Thomas, 1985: 227, pl. I, fig. 12 (Gulf of Mannar) (5).

Genus *Fasciospongia* Burton. *F. anomala* (Dendy, 1905); Thomas, 1985: 228, pl. I, fig. 14 (Gulf of Mannar) (5). *F. cavernosa* (Schmidt); Burton, 1937: 42 (as *Aplysinopsis reticulata*) Rao, 1941: 465 (as *Aplysinopsis reticulata*); Thomas, 1985: 227, pl. I, fig. 13 (Gulf of Mannar) (5).

Genus *Hyrtios* Duch. & Mich. *H. erecta* Keller; Burton, 1937: 43 (as *Duriella uigra*); Thomas, 1985: 220, pl. I, fig. 2 (Gulf of Mannar) (5).

Family Spongiidae Gray

Genus *Hyattella* Lendenfeld. *H. cribriformis* (Hyatt); Dendy, 1916b: 141 (Okhamandal, as *Hippospongia clathrata*); Burton, 1937: 41 (as *Luffariospongia clathrata*); Rao, 1941: 464 (as *Luffariospongia clathrata*); Thomas, 1985: 221, pl. I, fig. 4 (Gulf of Mannar); Thomas, 1979b: 13 (Minicoy I.) (2,3,5). *H. intestinalis* (Lamarck); Thomas, 1985: 221, pl. I, fig. 3 (Gulf of Mannar) (5).

Genus *Phyllospongia* Ehlers. *P. dendyi* Lendenfeld; Thomas, 1973b: 440; Thomas, 1979: 14 (Minicoy I.). *P. foliasceus* (Pallas); Thomas, 1979b: 14 (Minicoy I.); Pattanayak, 1998 (Andamans) (2,7). *P. papyracea* (Esper); Rao, 1941: 454 (Gulf of Mannar) (5). *P. papyracea* var. *polyphylla* de Laubenfels; Thomas, 1985: 222, pl. I, fig. 5 (Gulf of Mannar) (5).

Genus *Spongia* Linnaeus. *S. hispida* Lamark; Thomas, 1985: 220 (Gulf of Mannar) (5). *S. officinalis* var. *ceylonensis* Dendy, 1905; Burton, 1937: 39; Thomas, 1985: 219, pl. I, fig. 1 (Gulf of Mannar); Thomas, 1979: 12 (Minicoy I.) (2,5). *S. officinalis* var. *fenestrata* Rao, 1941: 455 (Gulf of Mannar) (5).

Order Dendroceratida

Family Dysideidae Gray

Genus *Dysidea* Johnston. *D. cineria* (Keller); Dendy, 1916b: 140 (Okhamandal as *Spongellia cinerea*) (3). *D. elegans* Nardo; Dendy, 1916b: 140 (Okhamandal as *Spongellia elegans*) (3). *D. fragilis* (Montagu); Burton, 1937: 41; Rao, 1941: 463; Thomas, 1985: 228, pl. I, fig. 15 (Gulf of Mannar); Thomas, 1979b: 14 (Minicoy I.) (2,5). *D. fragilis* var. *ramosa* (Schulze, 1879); Dendy, 1916: 139 (Okhamandal) (3). *D. herbacea* (Keller); Thomas, 1985: 329, pl. I, fig. 16 (Gulf of Mannar); Thomas, 1979b: 14 (Minicoy I.) (2,5).

Genus *Spongionella* Bowerbank. *S. nigra* Dendy, 1889; Burton, 1937: 42 (Gulf of Mannar) (5). *S. tuberosa* Burton, 1937: 42, pl. 9, fig. 58; Thomas, 1985: 301, pl. V, fig. 16 (Gulf of Mannar) (5).

Family Darwinellidae

Merekowsky

Genus *Darwinella* Müller. *D. australiensis* Carter; Dendy, 1916b: 139 (Okhamandal) (3). *D. mulleri* Schulze; Thomas, 1985: 230, pl. I, fig. 19 (Gulf of Mannar) (5).

Genus *Dendrilla* Lendenfeld. *D. cactos* (Selenka); Burton, 1937: 42 (as *Spongionella pulvilla*); Thomas, 1985: 229, pl. I, fig. 17 (Gulf of Mannar) (5). *D. membranosa* (Pallas); Burton, 1937: 43 (Gulf of Mannar) (5). *D. nigra* (Dendy, 1889); Burton, 1937: 43; Thomas, 1985: 230, pl. I, fig. 18 (Gulf of Mannar) (5).

Genus *Hexadella* Topsent. *H. purpurea* Burton, 1937: 43; Thomas, 1985: 231 (Gulf of Mannar) (5).

Family Dictyodendrillidae

Bergquist

Genus *Dictyodendrilla* Bergquist. *D. retiaria* (Dendy, 1915: 137, pl. IV, fig. 27) (Okhamandal) (3).

Order Verongida

Family Aplysinidae Carter

Genus *Aplysina* Nardo. *A. lacunosa* (Lamarck); Thomas, 1985: 225, pl. I, fig. 9 (Gulf of Mannar) (5).

Family **Druinellidae** Lendenfeld

Genus *Druinella* Lendenfeld. *D. purpurea* (Carter, 1880: 36) (as *Aphysilla purpurea*); Thomas, 1985: 231 (Gulf of Mannar as *Prammaphysilla purpurea*) (5).

Class **Calcarea**
Subclass **Calcinea**
Order **Clathrinida**

Family **Clathrinidae** Minchin

Genus *Clathrina* Gray. *C. coriacea* (Montagu); Pattanayak, 1998 (Andamans) (7).

Family **Leucettidae** de Laubenfels

Genus *Pericharax* Poléjaeff. *P. heteroraphis* Poléjaeff; Burton & Rao, 1932: 304; Pattanayak, 1998 (Andamans) (7).

Subclass **Calcaronea**
Order **Leucosolenida**

Family **Grantiidae** Dendy

Genus *Leucandra* Haeckel. *L. donani* var. *temiradiata* Dendy, 1916a: 86, pl. I, fig. 4a,b (Okhamandal) (3). *L. dwarkaensis* Dendy, 1916a: 86, pl. I, fig. 6, pl. II, fig. 10 a-e (Okhamandal) (3). *L. wasinensis* (Jenkin); Dendy, 1916a: 87, pl. I, fig. 5 (off Dwarka) (3).

Genus *Ute* Schmidt. *U. syconoides* (Carter); Burton & Rao, 1932: 305 (Tuticorin) (5).

Family **Heteropiidae** Dendy

Genus *Grantessa* Lendenfeld. *G. hastifera* (Row); Dendy, 1916a: 81, pl. I, fig. 2, 2a, pl. II, fig. 7a-f (off Dwarka) (3).

Genus *Heteropia* Carter. *H. glomerosa* (Bowerbank); Dendy, 1916a: 83, pl. I, fig. 3a-b, pl. II, fig. 8a-g (Okhamandal) (3).

Family **Sycettidae** Dendy

Genus *Syeon* Risso. *S. grantioides* Dendy, 1916a: 79, pl. I, fig. 1 (off Dwarka) (3).

Class **Hexactinellida**
Suborder **Amphidiscophora**
Order **Amphidiscosida**
Family **Hyalonematidae** Gray

Genus *Hyalonema* Gray. *H. aculeatum* Schulze; Schulze, 1902: 31, pl. II, figs 1-14; Pattanayak, 1998 (Andamans) (7). *H. affine* Marshall; Schulze, 1902: 27, pl. VII; Pattanayak, 1998 (Andamans) (7). *H. alcocki* Schulze, 1895; Schulze, 1902: 23, pl. VI, figs 1-8 (Laccadive

Sea) (2). *H. indicum* Schulze, 1895; Schulze, 1902: 10, pl. III, figs 1-13, pl. IV, figs 1-14 (Andamans, Laccadives); Pattanayak, 1998 (Andamans) (2,7). *H. lamella* Schulze, 1900; Schulze, 1902: 15, pl. XIX (Cape Comorin); Pattanayak, 1998 (Andamans) (5,7). *H. martabanense* Schulze, 1900; Pattanayak, 1902 (Andamans) (7). *H. masoni* Schulze, 1895; Schulze, 1902: 13, pl. V; Pattanayak, 1998 (Andamans) (7). *H. nicobaricum* Schulze, 1904 (Nicobars) (8). *H. rapa* Schulze, 1900; Schulze, 1902: 18, pl. XVII (Bay of Bengal); Pattanayak, 1998 (Andamans) (7,9). *H. weltneri* Schulze, 1900; Schulze, 1902: 36, pl. IV, figs 15-24 (Laccadive Sea) (2).

Genus *Lophophysema* Schulze. *L. inflatum* Schulze, 1902: 38, pl. XX, XXI; Pattanayak, 1998 (Andamans) (7).

Family **Pheronematidae** Gray

Genus *Pheronema* Leidy. *P. raphanus* Schulze, 1895; Schulze, 1902: 5, pl. I; Pattanayak, 1998 (Andamans) (7).

Genus *Semperella* Gray. *S. cucumis* Schulze, 1895; Schulze, 1902: 41, p.VIII; Pattanayak, 1998 (Andamans) (7).

Subclass **Hexasterophora**
Order **Hexactinosida**
Family **Aphrocallistidae** Gray

Genus *Aphrocallistes* Gray. *A. beatrix* Gray; Schulze, 1902: 87, pl. XV, figs 1-13; Burton & Rao, 1932: 302; Dendy & Burton, 1926: 227, Pattanayak, 1998 (Andamans) (7). *A. bocagei* Wright; Schulze, 1902: 93, pl. XVI (Andamans, Cape Comorin); Pattanayak, 1998 (Andamans) (5,7). *A. ramosus* Schulze; Schulze, 1902: 97, pl. XV, fig. 14; Pattanayak, 1998 (Andamans) (5).

Family **Farreidae** Gray

Genus *Farrea* Bowerbank. *F. occa* Bowerbank; Schulze, 1902: 86 (Andamans); Dendy & Burton, 1926: 226 (Cape Comorin, Andamans) (5,7).

Family **Tretodictyidae** Schulze

Genus *Hexactinella* Carter. *H. minor* Dendy & Burton, 1926: 227; Pattanayak, 1998 (Andamans) (7).

Order Lyssacinosida

Family Euplectellidae Gray

Sub family Corbitellinae Ijima

Genus *Dictyanthus* Schulze. *D. elegans* Schulze, 1895; Schulze, 1902: 70, pl. XII (Laccadive, Cape Comorin) (2,5).

Genus *Regadrella* Schmidt. *R. decora* Schulze, 1900; Schulze, 1902: 67, pl. XXII, figs 10-18 (Cape Comorin) (5).

Subfamily Euplectellinae Ijima

Genus *Euplectella* Owen. *E. aspera* Schulze, 1895; Schulze, 1902: 59, pl. XI (Laccadive Sea) (2). *E. aspergillum* Owen; Burton & Rao, 1932: 302 (Andamans) (7). *E. regalis* Schulze, 1900; Schulze, 1902: 61, pl. XXII, figs 1-9; Pattanayak, 1998 (Andamans). *E. simplex* Schulze, 1895; Schulze, 1902: 51, pl. X; Pattanayak, 1998 (Andamans) (7).

Family Rossellidae Gray

Sub family Lanuginellinae Schulze

Genus *Lophocalyx* Schulze. *L. spinosa* Schulze, 1900; Schulze, 1902: 82, pl. XXIII; Pattanayak, 1998 (Andamans).

INCERTAE SEDIS

Cryptospongia enigmatica Burton, 1928: 133, pl. 2, fig. 5; Pattanayak, 1998 (Andamans) (7).

Protoschmidtia cerebrum Burton, 1928: 116, pl. 1, fig. 2; Pattanayak, 1998 (Andamans) (7).

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LITERATURE CITED

- ALI, M.A. 1956. Addition to the sponge fauna of Madras. Journal of the Madras University B 26(2): 289-301.
- ANNANDALE, N. 1911. Some sponges associated with gregarious molluscs of the family Vermetidae. Records of the Indian Museum 6: 47-55.
- 1915a. Indian boring sponges of the family Clionidae. Records of the Indian Museum 11: 1-24.
- 1915b. Some sponges parasitic on Clionidae with further notes on that family. Records of the Indian Museum 11: 457-478.
- 1915c. Fauna of Chilka Lake. Memoirs of the Indian Museum 5: 21-54.
- BOWERBANK, J.S. 1873. Report on a collection of sponges found at Ceylon by E.W.H. Holdsworth Esq. Proceedings of the Zoological Society of London 1873: 25-31, pls 5-7.
- BURTON, M. 1928. Report on some deep sea sponges from the Indian Museum collected by the R.I.M.S. 'Investigator' Part II. Tetraxonida (concluded) and Euceratosa. Records of the Indian Museum 30(1): 109-138.
1930. Addition to the sponge fauna of Gulf of Mannar. Annals and Magazine of Natural History (5)10: 665-676.
1937. Supplement to the littoral fauna of Krusadai Island. Bulletin of the Madras Government Museum, Madras 1(2) pt. 4: 1-58, pls I-IX.
- BURTON, M. & RAO, H.S. 1932. Report on the shallow-water marine sponges in the collection of the Indian Museum. Records of the Indian Museum 34(3): 299-356.
- CARTER, H.J. 1880. Report on specimens dredged up from the Gulf of Mannar and presented to the Liverpool Free Museum by Capt. W.H. Cawne Warren. Annals and Magazine of Natural History (5)5: 437-457, pls 18-19; Series (5)6: 35-61; 129-156, pls 4-8.
1881. Supplementary report on specimens dredged up from the Gulf of Mannar together with others from the sea in the vicinity of the Basse Rocks & from Bass's Straits respectively, presented to the Liverpool Free Museum by Capt. W.H. Cawne Warren. Annals and Magazine of Natural History (5)7: 361-385, pls 18.
1887. Report of Marine sponges, collected from King Island in the Mergui Archipelago, collected for the Trustees of the Indian Museum, Calcutta by Dr. John Anderson. Journal of the Linnacan Society London 21: 61-84, pls 5-7.
- DENDY, A. 1887. The sponge fauna of Madras. A report on a collection of sponges obtained in the neighbourhood of Madras by Edgar Thurston Esq. Annals and Magazine of Natural History (5)20: 153-165, pls 9-12.
1889. Report on a second collection of sponges from the Gulf of Mannar. Annals and Magazine of Natural History (6)3: 73-99, pls 3-5.
1905. Report on the sponges collected by Prof. Herdman, at Ceylon, in 1902. Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Mannar, Royal Society, London, Supplement 3(18): 57-246.
- 1916a. Report on the calcareous sponges collected by Mr. James Hornell at Okhamandal in Kattiawar in 1905-1906. Report of Govt. of Baroda on the Marine Zoology of Okhamandal (2) 17: 79-91.
- 1916b. Report on the non-calcareous sponges collected by Mr. James Hornell at Okhamandal in Kattiawar in 1905-1906. Report of Government

- of Baroda on the Marine Zoology of Okhamandal (2) 17: 93-146, pls 1-4.
- DENDY, A. & BURTON, M. 1926. Report on some deep sea sponges from the Indian Museum collected by the R.I.M.S. 'Investigator'. Part-I. Hexactinellida & Tetraxonida (Pars.). Records of the Indian Museum 28: 225-248.
- HOOPER, J.N.A. 1996: Revision of Microcionidae (Porifera: Poecilosclerida: Demospongiae), with description of Australian species. Memoirs of the Queensland Museum 40: 1-626.
- HOOPER, J.N.A. & WIEDENMAYER, F. 1994. Porifera. Pp 1-624. In Wells, A. (ed.) Zoological Catalogue of Australia. Vol. 12. (CSIRO Australia: Melbourne).
- KUMAR, A. 1924. On some Tetraxonid sponges in the collection of the Indian Museum. Calcutta. Proceedings of the 11th Indian Science Congress (1924): 111.
1925. Report on some Tetraxonid sponges in the collection of Indian Museum. Records of the Indian Museum 27: 211-229.
- PATTANAYAK, J.G. 1995. Fauna of Chilka Lake. Porifera. In Director Zoological Survey of India, Calcutta (ed.) *Wetland Ecosystem series 1*: 221-226.
1998. Diversity of sponges in Andaman and Nicobar Islands, India. (PhD Thesis, University of Calcutta: Calcutta).
- RAO, H.S. 1941. Indian and Ceylon sponges in the Naturalhistoriska Riksmuseet, Stockholm, collected by K. Fristedt. Records of the Indian Museum 43: 417-496.
- SCHULZE, F.E. 1894. Hexactinelliden des Indischen Ocean. 1. Die hyalonmatiden. Aus Der Abhandlungen Der Konigl Preuss Akademie Der Wissenschaften Zu Berlin Vom Jahre (1894): 1-60.
1895. Hexactinelliden des Indischen Ocean. 2. Die Hexasterophora. Aus Der Abhandlungen Der Konigl Preuss Akademie Der Wissenschaften Zu Berlin Vom Jahre (1895): 1-92.
1900. Hexactinelliden des Indischen Ocean. Aus Der Abhandlungen Der Konigl Preuss Akademie Der Wissenschaften Zu Berlin Vom Jahre (1900): 1-92.
1902. An account of the Indian Triaxonia collected by the Royal Indian Marine Survey Ship 'Investigator' translated into English by R. von Lendenfeld. Pp 1-113. (Trustees of the Indian Museum: Calcutta).
1904. Die Hexactinellia. Wiss Ergebn dt. Tiefsee-Exped. 'Valdivia' 1898-1899 4: 1-265.
- THOMAS, P.A. 1968a. The sponge resources of India. Pp. 31-32. In Symposium on the living resources of the seas around India. (Central Marine Fisheries Research Institute: Mandapam Camp).
- 1968b. Studies on Indian sponges -I. Two new species of sponges belonging to the genera *Echinodictyum* Ridley and *Rhabderemia* Topsent (class Demospongiae Sollas, order Poecilosclerida Topsent). Journal of the Marine Biological Association of India 10(2): 245-249.
- 1968c. Studies on Indian sponges-II. Two new species of silicious sponges belonging to the genera *Aka* de Laubenfels and *Damirina* Burton. Journal of the Marine Biological Association of India 10(2): 250-254.
- 1968d. Studies on Indian sponges-III. Two species of the siliceous sponges of the family Ophlitaspongiidae de Laubenfels (class Demospongiae, order Poecilosclerida Topsent). Journal of the Marine Biological Association of India 10(2): 255-259.
- 1968e. Studies on Indian sponges-IV. Additions to the genus *Corticium* Schmidt with notes on the distribution of *Corticium candelabrum* Schmidt. Journal of the Marine Biological Association of India 10(2): 260-263.
- 1968f. Studies on Indian sponges-V. Two new records of siliceous sponges belonging to the families Myxillidae Hentschel and Spirastrellidae Hentschel from the Indian region. Journal of the Marine Biological Association of India 10(2): 264-268.
- 1969a. Boring sponges of the reefs of Gulf of Mannar and Palk Bay. P. 19. In Symposium on corals and coral reefs. (Marine Biological Association of India: Mandapam Camp).
- 1969b. Catalogue of sponges in the reference collection of the Central Marine Fisheries Research Institute, Mandapam Camp. Bulletin Central Marine Fisheries Research Institute (7): 13-21.
- 1970a. On some deep sea sponges from the Gulf of Mannar with descriptions of three new species. Journal of the Marine Biological Association of India 12(1&2): 202-209.
- 1970b. Studies on Indian sponges - VI. Two new records of siliceous sponges (Poecilosclerida: Tedaniidae) from the Indian region. Journal of the Marine Biological Association of India 12(1&2): 43-50.
- 1970c. Studies of Indian sponges-VII. Two new records and a new species of the genus *Plakina* Schulze from the Indian region. Journal of the Marine Biological Association of India 12(1&2): 51-56.
1972. Boring sponges of the reefs of Gulf of Mannar and Palk Bay. Pp. 333-362. In Proceedings of a Symposium on Corals and Coral Reefs, 1969. (Marine Biological Association of India: Calcutta).
- 1973a. The sponge resources of India. Pp. 693-699. In Proceedings of a Symposium on Living Resources of India. (Marine Biological Association of India: Calcutta).
- 1973b. Two new records of Demospongiae from the Indian Ocean. Journal of the Marine Biological Association of India 15(1): 430-442.
1974. A new genus and species (*Qasimella indica*) of Demospongiae from Indian seas. Journal of

- the Marine Biological Association of India 16(1): 311-313.
1975. Boring sponges of Zuari and Mandovi estuaries. Bulletin of the Department of Marine Science, University of Cochin 7(1): 117-126.
- 1976a. *Endectyon lamellosa* n. sp. (Demospongiae: Poecilosclerida, Raspailiidae) from the Indian seas and a revised key to the Indian species of *Endectyon* Topsent. Journal of the Marine Biological Association of India 18(1): 169-172.
- 1976b. History of spongiology of the Indian Ocean. Journal of the Marine Biological Association of India 18(3): 610-625.
1977. Studies on Indian sponges VIII. Four new records of siliceous sponges *Echinocalina glabra* (Ridley & Dendy), *Higginsia mixta* (Hentschel), *Geodia lindgreni* (Lendenfeld) and *Pachamphilla dendyi* Hentschel from the Indian Ocean. Journal of the Marine Biological Association of India 19(1): 115.
- 1979a. Boring sponges destructive to economically important molluscan beds and coral reefs in the Indian seas. Indian Journal of Fisheries 26(1&2): 163-200.
- 1979b. Demospongiae of Minicoy Island (Indian Ocean) Part-I, orders Keratosida and Haplosclerida. Journal of the Marine Biological Association of India 21(1&2): 10-16.
- 1980a. Demospongiae of Minicoy Island (Indian Ocean) Part-II order Poecilosclerida. Journal of the Marine Biological Association of India 22(1&2): 1-7.
- 1980b. Demospongiae of Minicoy Island (Indian Ocean) Part-III. Order Halichondrida and Hadromerida, Epipolasida and Choristida. Journal of the Marine Biological Association of India 22(1&2): 8-20.
1983. Distribution and affinities of the sponge fauna of the Indian region. Journal of the Marine Biological Association of India 25(1&2): 7-16.
1984. Sponges collected aboard R.V. 'Skipjack' from the south east coast of India. Journal of the Marine Biological Association of India 26(1&2): 95-102.
1985. Demospongiae of the Gulf of Mannar and Palk Bay. Pp 205-365. In James, P.S.B.R. (ed.) Recent Advance in Marine Biology (Today Tomorrow's Printers and Publishers: New Delhi).
- THOMAS, P.A., RAMADOSS, K. & VINCENT, S.G. 1993. Invasion of *Cliona margaritifera* Dendy and *C. lobata* Hancock on the molluscan beds along the Indian coast. Journal of the Marine Biological Association of India 35(1&2): 145-156.
- THOMAS, P.A. & THANAPATI, V. 1980. An ancient window pane oyster bed in Goa with comparative notes on the Oyster in an extant bed. Indian Journal of Fisheries 27(1&2): 54-60.

THE IMPACT OF TRAWLING ON SOME TROPICAL SPONGES AND OTHER SESSILE FAUNA.

Memoirs of the Queensland Museum 44: 455. 1999:- Following a replicated repeated-trawl depletion experiment, which removed 70-90% of the initial biomass of sessile fauna, non-destructive methods have been used to measure recovery of the structurally dominant species. To date, three post-impact surveys have been completed (1 month, 1 year, 2 years) on 6 trawled swaths and 6 controls. These involved quantitative video observations from a tow-sled and from an ROV with positioning precision of 2m. More than 80 taxa of sessile fauna were recorded and about 15 taxa, including sponges, gorgonians, and alcyonarians and hard corals, were abundant enough for analysis. The attributes measured for each organism were species, position, size (height, width, and area), and condition (proportion intact, dead, or encrusted). These data enabled analyses of density, size, condition and species composition, with high precision. We have demonstrated statistically that the methods are very powerful for detecting recovery on the trawled tracks, but the time series is, as yet, too short to identify any recovery. Nevertheless, in treatment vs control or before vs after comparisons, all taxa analysed for which sample size was adequate, showed significant impact

due to trawling, for at least one or more of the measured attributes. For all benthos taxa combined, the rate of decrease in benthos density with trawl intensity corresponded to ~10% per trawl, so that in areas trawled 13 times, the benthos density was only ~25% of that in un-trawled areas. This conclusion was very similar to the overall estimate of removal obtained from depletion-regression analysis of the catch obtained during the repeat-trawl experiment. The results also indicated the nature in which trawl impact was manifested for different organisms with different structure and morphology. The sea whips were most resilient to removal, though they could be damaged. Sponges and soft corals were relatively easily removed and hard corals were easily broken. The gorgonians were intermediate and variable in resilience. The interaction between these differences and trawl impact caused a marked change in, and degradation of, the community composition of the seabed habitat. □
Porifera, sessile fauna, impact, condition, recovery, trawling, ROV, video, resilience.

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